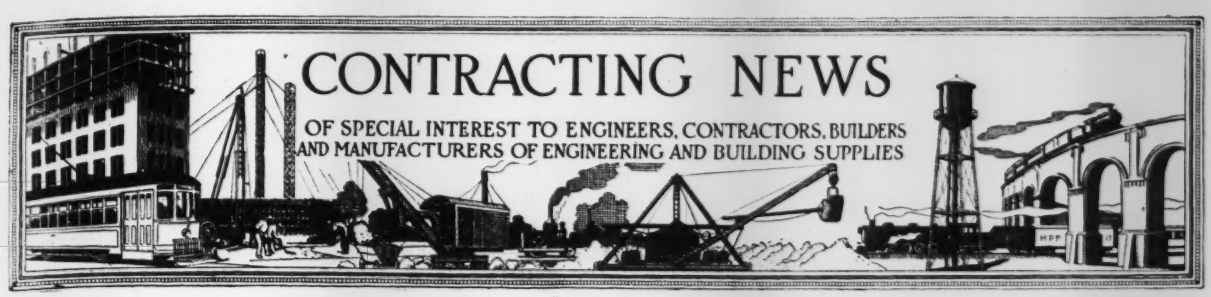
CONTRACTING NEWS
OF SPECIAL INTEREST TO ENGINEERS, CONTRACTORS, BUILDERS
AND MANUFACTURERS OF ENGINEERING AND BUILDING SUPPLIES

Proposals

For Proposals Advertised See Pages 50 to 54, Inclusive

WATER-WORKS

Bids Close		See Eng. News-Record
Dec. 28.	Tonawanda, N. Y.	Dec. 27
Jan. 3.	Bonifay, Fla.	Dec. 27
Jan. 3.	Tipton, Kan	Dec. 20
Feb. 5.	Jersey City, N. J.	Dec. 27

SEWERS

Dec. 27.	New York, N. Y.	Dec. 20
Dec. 30.	Rocky River, O.	Dec. 20
Dec. 31.	St. Paul, Minn.	Dec. 27
Jan. 3.	Union Grove, Wis.	Dec. 20
Jan. 7.	Westfield, N. J.	Dec. 20
Jan. 8.	Miami, Okla.	Dec. 20
Feb. 1.	Toledo, O.	Dec. 13

BRIDGES

Dec. 29.	Troy, N. Y. Adv. Dec. 13 and 20.	Dec. 13
Jan. 3.	Anoka, Minn.	Dec. 20
Jan. 4.	Richmond, Va. Adv. Dec. 20 and 27.	Dec. 20
Jan. 8.	Salinas, Cal.	Dec. 13
Jan. 9.	Lodge Grass, Mont.	Dec. 20
Jan. 9.	Hardin, Mont.	Dec. 27
Jan. 15.	Eureka, Cal.	Dec. 27

STREETS AND ROADS

Dec. 27.	New York, N. Y.	Dec. 20
Dec. 28.	Webster Springs, W. Va.	Dec. 13
Dec. 29.	Huntington, Ind.	Dec. 6
Dec. 31.	Bay Minette, Ala.	Dec. 6
Dec. 31.	California	Dec. 20
Jan. 2.	Alexandria, La.	Dec. 13
Jan. 3.	Michigan	Dec. 27
Jan. 4.	Richmond, Va.	Dec. 20
Jan. 7.	Pasco, Wash.	Dec. 20
Jan. 7.	Portsmouth, O.	Dec. 27
Jan. 7.	Louisiana	Dec. 27
Jan. 7.	California	Dec. 27
Jan. 8.	Quincy, Fla.	Dec. 27
Jan. 8.	Wenatchee, Wash.	Dec. 20
Jan. 8.	Oregon	Dec. 20
Jan. 9.	Sapulpa, Okla.	Dec. 27
Jan. 21.	Lansing, Mich. Adv. Dec. 27.	Dec. 27

EXCAVATION AND DREDGING

Dec. 31.	Glenwood, Minn.	Dec. 20
Jan. 3.	Sac City, Ia.	Dec. 20
Jan. 9.	Tuscola, Ill.	Dec. 20
Jan. 11.	Walker, Minn.	Dec. 20
Jan. 11.	Phila., Miss.	Dec. 27
Jan. 12.	Monticello, Ind.	Dec. 27

Bids Close		See Eng. News-Record
Jan. 7.	Palmdale, Cal.	Dec. 27
Jan. 8.	Albany, N. Y. Adv. Dec. 20.	Dec. 20

BUILDINGS

Dec. 31.	Brooklyn, N. Y.	Dec. 20
Dec. 31.	Syracuse, N. Y.	Dec. 27
Jan. 1.	Wichita, Kan.	Nov. 22
Jan. 3.	Peabody, Kan.	Dec. 27
Jan. 5.	Springfield, Vt.	Dec. 27
Jan. 7.	Cleveland, O.	Dec. 20
Jan. 7.	Chenango Bridge, N. Y.	Dec. 27
Jan. 8.	Dodge Center, Minn.	Dec. 13
Jan. 15.	New York, N. Y.	Nov. 29
Jan. 15.	Waukesha, Wis.	Dec. 27
Feb. 15.	Duluth, Minn.	Dec. 27
Jan. 16.	Huron, S. D.	Dec. 20

FEDERAL GOVERNMENT WORK

Jan. 3.	Distribution System — San Pedro, Cal.	Dec. 27
Jan. 4.	Buildings — Grande Isle, La. Adv. Dec. 6 and 13.	Dec. 6
Jan. 5.	Jetty Work — Jacksonville, Fla. Adv. Dec. 13.	Dec. 13
Jan. 7.	Post Office — Shawnee, Okla.	Dec. 6
Jan. 7.	Electric Traveling Cranes— —Brooklyn, Y.	Dec. 13
Jan. 7.	Post Office — Bakersfield, Cal.	Dec. 20
Jan. 7.	Laundry Equipment, etc.— Annapolis, Md.	Dec. 20
Jan. 7.	Power House Superstructure—Brooklyn, N. Y.	Dec. 27
Jan. 11.	Dredging — Wilmington, Del. Adv. Dec. 27.	Dec. 27
Jan. 14.	Post Office—Owego, N. Y. Adv. Dec. 13 and 20.	Dec. 13
Jan. 14.	Roads—Chelsea, Mass.	Dec. 20
Jan. 14.	Hospital—Chelsea, Mass.	Dec. 27
Jan. 15.	Post Office — Eldorado, Kan.	Dec. 20
Jan. 18.	Lockgates—Cincinnati, O.	Dec. 27
Jan. 21.	Radio Towers and Tanks— Barataria, La.	Dec. 20
Jan. 28.	Post Office—Sunbury, Pa.	Dec. 6
Feb. 5.	Excavators—Denver, Colo.	Dec. 27

MISCELLANEOUS

Jan. 2.	Improving Harbor — Newport, Ore. Adv. Nov. 29 to Dec. 13.	Nov. 29
Jan. 3.	Transmission Line — Fremont, N. C.	Dec. 20
Jan. 5.	Levee—Chamois, Mo. Adv. Dec. 13 and 20.	Dec. 13
Jan. 8.	Pier—Philadelphia, Pa.	Dec. 27
Jan. 15.	Dam—Calgary, Alta. Adv. Dec. 20.	Dec. 20
Feb. 11.	Harbor Improvement—Mobile, Ala.	Dec. 27

Where name of official is not given, inquiries should be addressed to City Clerk, County Clerk or corresponding official.

WATER-WORKS

Proposed Work

N. J., Hackensack — Bd. Pub. Utility granted permission to Hackensack Water Co. to issue common stock for $500,000; proceeds to be used for improvements.

N. J., Perth Amboy—City having plans prepared building reservoir with initial capacity of 40,000,000 gal. and ultimate capacity of 156,000,000 gal., including 10,000 ft. pipe to connect new reservoir with city system and building new force main across Raritan River. G. A. Johnson, city engr.

Pa., Harrisburg — Lebanon Consolidated Water Co. filed notice with Pub. Serv. Comn. for $520,000 bond issue for improvements.

Pa., Yoe—Boro. election soon to vote on bond issue to build water system.

W. Va., Wheeling—City plans to install new pumping station. C. B. Cooke, city engr.

Miss., Wiggins—City having plans prepared by X. Kramer, engr., Magnolia, improving water and electric-light plants.

Tenn., Knoxville — City plans to build water system through lower South Knoxville to Vestal. About $30,240 for pipe, $2000 for hydrants, $4060 for gate valves, etc. J. B. McCalla, city engr. Noted Oct. 4.

O., Canton—City having plans prepared building storm water sewer on Harrisburg Rd., N. E. W. E. Sarver, city engr.

O., Lorain—City will issue $90,000 bonds to improve pumping plant, including new basins, wells and machinery for filtering plant. C. C. Miller, city engr. Noted Sept. 12.

Ill., La Moille—(Official)—City rejected bids improving water system, including water mains, fire hydrants, etc. Noted Dec. 6.

Minn., Nashwauk—City plans to build steel water reservoir.

Kan., Ogden—City voted $12,000 bonds to build water system. Noted Nov. 22.

N. D., Wilton—City had plans prepared building water system.

Mont., Eureka — City will issue $16,000 bonds to build water system.

Tex., Brady—City election Jan. 8 to vote on $25,000 bonds to build water system.

Tex., Higgins—City issued $20,000 bonds to build water system.

Okla., Hartshorne—City voted $17,500 bonds to improve water-works system. S. Aldridge, city clk. Noted Oct. 11.

Okla., Pauls Valley—City plans election to vote on bonds for water-works and electric-light systems and sewerage extension.

Okla., Quapaw—City election Jan. 1 to vote on $75,000 bonds for water-works and sewerage systems.

Okla., Waurika—City rejected bids building water system. Noted Oct. 18.

Water-Works (Continued)

Colo., Montrose—City plans to build 3-mi. wooden pipe line to carry water to Cimarron.

Idaho, Twin Falls — City having plans prepared by Burns & McDonald, engrs., 400 Inter-State Bldg., Kansas City, Mo., building water system, including 4,000,000 gal. filtration plant, main supply system, 83 new fire hydrants and 4-in. mains in residential districts. About $372,011. Noted Dec. 20.

Cal., San Diego — See "Streets and Roads."

Ont., Toronto—City soon lets contract installing air chambers in main water-works pumping station. About $50,000. G. G. Powell, city engr.

Ont., Windsor—Water Comrs. plan to install 2 large electric pumps in water-works plant.

B. C., Sidney—City plans to extend Victoria water system of Saanich Peninsula to include Sidney. About $25,000.

BIDS DESIRED

N. Y., Tonawanda—(Official)—Until Dec. 28, by M. W. Simson, city clk., furnishing and laying 2100 ft. 4-ft. cast iron, wood or cement intake water pipe in Niagara River to connect with Tonawanda Pumping Sta., including construction of suction well and intake pier. Noted Oct. 4.

N. J., Jersey City—(Official)—Until Feb. 5, by City laying 72 in. steel riveted pipe reinforced by concrete rings under Hackensack and Passaic Rivers, together with land connections on each side of present 72 in. pipe. A. Van Keuren, city engr.

Fla., Bonifay—Until Jan. 3, by City building water system. J. B. McCrary Co., 3rd Natl. Bank Bldg., Atlanta, Ga., engrs.

PRICES AND CONTRACTS AWARDED

(★Indicates award of contract)

N. Y., Brooklyn—Bd. Pub. Charities, Municipal Bldg., New York City, received low bids Dec. 20, installing water system in Kings Co. Hospital, from T. O'Brien, Inc., 6311 5th Ave., $13,691; F. S. Eisinger, $19,573; Chute, Thornton & Badley, Corp., 2 East 13th St., New York City, $24,500. Noted Dec. 13.

★**Tex., Port Arthur**—City let contract installing 56,000 lin.ft. cast-iron water mains to H. W. Cardwell Constr. Co. About $24,300. Noted July 5.

★**Wash., Seattle**—(Official)—City let contract building watermains in Alki Ave., to Fiorito Bros., 1630 25th Ave., $57,825. Noted Dec. 20.

Man., Winnipeg — (Official) — Greater Winnipeg Water Dist. received low bids for Contr. No. 56, building tunnel, shafts and well, at Red River crossing; Contr. No. 35, building gate house and intake at Waugh, from T. Kelly & Sons, $310,490; Tremblay-McDiarmid Co., $327,921; Winnipeg Aqueduct Constr. Co., $366,485. Noted Nov. 8.

Man., Winnipeg — (Official) — Greater Winnipeg Water Dist. received low bids building gate house and intake at Shoal Lake, from C. G. Anderson, $90,942; S. Brown, $97,702; Winnipeg Aqueduct Constr. Co., $110,337. Noted Nov. 8.

SEWERS

Proposed Work

N. J., Westmont — City plans to build sewerage system. A. Haddonfield, city engr.

Pa., Wilkes-Barre—City having plans prepared by A. Potter, engr., 50 Church St., New York City, building sewerage system and sewage disposal plant. Noted June 14.

Ga., Columbus—City plans to build sanitary sewerage system. About $350,000. S. Goody, city engr. Noted May 24.

O., Akron—See "Streets and Roads."

O., Bellefontaine — City plans to build sewer in Green and Detroit Sts. and John Ave. C. O. Innskeep, city engr.

Wis., Kenosha—City soon receives bids building trunk sewer involving 1200 ft. 36-in. rein.-con. pipe, 5935 ft. 12-36-in. tile and 45 manholes. B. Brennan, city engr.

Kan., Marquette—City had plans prepared by E. T. Archer & Co., engrs., New England Bldg., Kansas City, Mo., building sewerage system. About $20,000.

Kan., Wichita — City having plans prepared for building sanitary sewer No. 20, 5 mi. long, from northern to southern end of city. About $180,000. Northern industries will appropriate about $40,000 toward cost. P. L. Brockway, city engr. Noted Aug. 23.

Neb., Fremont—City having plans prepared by Burns & McDonnell, engrs., 402 Inter-state Bldg., Kansas City, for sewage disposal plant. About $75,000. Noted Sept. 20.

Idaho, Preston—City voted $50,000 bonds to build sewerage system. J. Johnson, clk. Noted Nov. 8.

Okla., Pauls Valley—See "Water-Works."

Okla., Quapaw—See "Water-Works."

Idaho, Rupert—Council passed ordinance to issue $82,000 bonds to build sewers in Dist. No. 1. F. Scheffel, clk.

Ont., St. Thomas—City having plans prepared for storm sewers. Bonds for $64,000 will be voted in January for project. A. Ferguson, city engr. Noted Aug. 9.

BIDS DESIRED

Minn., St. Paul—(Official)—Until Dec. 31, by H. W. Austin, purch. agt., building storm water relief sewer in Como Ave. from Langford Ave. to Knapp Pl. and from Como Ave. West to Kanapp St. O. Clausen, city engr.

PRICES AND CONTRACTS AWARDED

(★Indicates award of contract)

★**Mass., Brockton**—City let contract for new electrical equipment for Campello sewerage pumping station, to Power Equipment Co., 131 State St., Boston, $12,750.

N. Y., Brooklyn—L. H. Pounds, boro. pres., received low bids, Dec. 19,, (a) building sewers in Ave. M from West St. to Ocean Pkway.; East 3rd St. from Ave. M to East 4th St.; East 5th St. from Ave. M to Ocean Pkway.; outlet sewers crossing West St. from Ave. M to 23rd Ave. to Bay Pkway., involving 4970 lin.ft. 6-48-in. pipe, 33 manholes, 27 sewer basins, and 34,000 ft. sheeting and bracing and 10 cu.yd. concrete.; (b) building sewer in 59th St. from 20th to 21st Ave., and outlet sewer in 21st Ave. from 59th to 60th Sts., from E. Ghilardi Contg. Co., 1217 47th St., (a) 94% (b) 99%; Tomasetti & Turicamo Contg. Co., Ave. U and East 19th St., (a) 95%; (b) 95%, C. Petracea, (a) 97%; J. J. B. La Marsh, Inc., 26 Court St., (b) 100%. Noted Dec. 13.

★**Pa., Phila.**—(Official)—City let contract building intercepting sewers along Frankford Creek, Cont. No. 17; also miscellaneous piping for grit chamber north of Lycoming St. and west of O St., Contr. No. 16L, to J. J. McHugh, 1430 South Penn Sq., $37,000. Noted Dec. 13.

★**W. Va., Wellsburg** — City let contract building lateral sewers in 3rd and 4th Wards, to B. O. Cresap, $38,679. Noted Nov. 1.

★**Ind., Frankfort** — (Official)—City let contract building storm sewer in West Washington St., including 1010 ft. 4 ft. segment block on concrete tile, 2130 ft. 12-18 in. tile to C. A. Donho & Son, Frankfort, $13,137. Noted Nov. 29.

★**Ind., Hammond**—City let contract laying sewer in Atchison Ave. from lake front railroad tracks to 121st St., to United Constr. Co., $96,000. Noted Nov. 8.

★**Mont., Glasgow** — City let contract building storm and sanitary sewers in Dist. No. 38, to Empire Constr. Co., 6 Samuelson Bldg., Minot. Noted Dec. 6.

★**Cal., Daly City**—See "Streets and Roads."

BRIDGES

Proposed Work

Fla., Bradentown — See "Streets and Roads."

Ia., Marshalltown—Marshall Co. will sell $10,000 bonds Jan. 1 to build bridges.

Cal., Oakland—Alameda Co. and Southern Pacific Ry. had plans prepared for bascule bridge over inner harbor of Oakland. W. Hood, San Francisco, ch. engr. Noted Aug. 30.

BIDS DESIRED

Mont., Hardin—Until Jan. 9, by State Highway Comn., Helena, building 160-ft. wood and steel bridge over Big Horn River in Big Horn Co.

Cal., Eureka—(Official)—Until Jan. 15 by F. M. Kay, clk., Humboldt Co., building 500-ft. span highway bridge with 75-ft truss bridge approach on each side over Eel River near Alderpoint in Rd. Dist. No 2. About $55,000.

PRICES AND CONTRACTS AWARDED

(★Indicates award of contract)

★**N. J., Jersey City** — Bd. Freeholders Hudson Co., let contract improving 14th St viaduct (Hoboken), to Nolan & Hornung Constr. Co., 143 Summit Ave., West Hoboken. About $62,471. Noted Oct. 4.

STRUCTURAL STEEL WORK

Proposed Work

Minn., Nashwauk—See "Water-Works."

REINFORCED CONCRETE

Proposed Work

Canandaigua, N. Y.—See "Miscellaneous."

Pa., East Liberty—(Pittsburgh P. O.)—See "Industrial Works."

Wis., Milwaukee—See "Industrial Works."

Tex., Lucas—See "Industrial Works."

PRICES AND CONTRACTS AWARDED

★**Ont., Toronto**—See "Buildings."

STREETS AND ROADS

Proposed Work

Mass., Fitchburg — (Official) — Dept. Streets and Engr. rejected bids furnishing paving material. New bids. W. J. Gannon, acting comr. Noted Nov. 29.

N. J., Newark—(Official)—City plans to resurface with asphalt on 1 in. top surface over old binder, on old concrete foundation burner method to be employed, Newton St. from 14th Ave. to Cabinet St.; Lafayette St. from New Jersey Railroad Ave. to Hamburg Pl.; Niagara St. from Ferry to Berlin Sts.; repaving with asphalt on 2-in. top surface, 1½ binder, on 6-in. concrete foundation, West Kinney St. from Broad to Washington Sts.; Lyons Ave. from Clinton Pl. to Newark-Irvington line; South 10th St. from Springfield to Avon Aves.; Lincoln Ave. from Arlington Ave. to Carteret St.; Heller Pkway. from Sumner to Mt. Pleasant Aves.; also repaving Ferry St. from Lenz Ave. to Blanchard St. M. R. Sherrerd, city engr.

N. J., Passaic—City plans to issue $12,213 bonds to build and reset curbs on Van Houten Ave. C. R. Wise, city engr.

N. J., Westfield—Town Council plans to improve portion Hazel and Woodland Aves., Sinclair Pl. and East Walnut St. A. W. Vois, town engr.

Pa., Norristown—Montgomery Co. rejected bids paving Germantown Turnpike between DeKalb St. Rd. and western end of Perkiomen bridge. Noted Nov. 29.

Pa., Pittsburgh — (Official) — Council passed ordinance to grade, pave and curb Bishop St. from Antietam to Chislett Sts., cost, $10,500; Rockledge St. from Miles Way to Romanhoff St., $9000; Romanhoff St. from Rockledge to Hespen Sts., $25,500; Tokio St. from Frankstown Ave. to Calistoga St., $30,000. N. S. Sprague, city engr.

W. Va., Martinsburg—City plans to pave 307,000 yd. brick and asphalt pavement. E. D. Bromley, city engr.

Streets and Roads (Continued)

W. Va., Point Pleasant—Mason Co. sold $20,000 bonds to improve roads in Lewis Dist. Noted May 31.

N. C., Boone—Bd. Comrs. Watauga Co. plans $200,000 bond issue to build roads. R. H. Brown, secy. Noted May 24.

Ga., Barnesville — City plans to pave streets in business section. M. P. Owen, city clk.

Ga., Nashville—(Official)—City defeated $18,000 bond issue to pave streets. Noted Nov. 8.

Fla., Bradentown — (Official) — Manatee Co. sold $200,000 bonds to build roads and bridges in Palmetto-Ellenton-Terra Cela-Gillette Dist. Noted Nov. 15.

Fla., Jasper—Hamilton Co. voted $400,000 bonds to build roads, including 30 mi. brick or asphalt road from Georgia State line to Suwanee Co. line at White Springs. About $250,000. Surplus will be used to hard surface lateral roads through east district. State and Federal Government will appropriate $50,000 toward cost. Noted Nov. 29.

O., Akron—Summit Co. plans to extend North Howard Rd. from high level bridge of North Hill to Cuyahoga Co. line, 17 mi.; also completing road from Britain and East Akron to Massillon. Cost, $450,000 and $150,000 respectively.

O., Akron—(Official)—City receives bids in March paving, building sewers and sidewalks on North, Grant and Cuyahoga Sts. and Martha Ave., involving $7500 lin.ft. pavment, 30 ft. wide. S. A. Zeisloft, city engr.

O., Cleveland—(Official)—City plans to grade, drain, curb and pave with brick on concrete foundation, Crestwood Ave. S. E., from Woodhill Rd., S. E. to East 10th St.; Rugby Rd., N. E. from Rodman Court N. E. to East 134th St.; Bliss Ave., N. E. from Addison Rd., N. E. to East 66th St.; open and extend West 30th St. from Roanoke Ave. S. W. to Colburn Ave., S. W.; grading Mary Ave. S. W. from West 3rd St. to Cuyahoga River. R. Hoffman, city engr.

O., Fremont—Sandusky Co. plans to pave 4 mi. Maumee Turnpike, 1 mi. west of Bellevue to east corporation line of Clyde. State and Federal Government to appropriate toward cost.

O., Port Clinton—Ottawa Co. Comrs. plan to pave 6½ mi. Rd. No. 1, concrete. Noted Aug. 23.

O., St. Bernard — (Cincinnati, P. O.)—City plans to pave several streets providing council appropriates about $60,000. H. A. Nunlist, city engr.

O., Wooster—Wayne Co. had plans prepared paving road 9.8 mi. long, 16 ft. wide between Wooster and Creston; also Lincoln Highway west of city, monolithic brick. Cost, $330,000 and $184,000 respectively.

Mich., Charlevoix—Charlevoix Co. plans to spend $350,000 to build Dixie Highway and main tributaries of Mackinaw Trail. Noted Oct. 11.

Mich., Muskegon—City had plans prepared paving Lake St., concrete. About $59,416. P. Grimes, city engr.

Ill., Belvidere—(Official)—Boone Co. election Jan. 9 to vote on $400,000 bonds to build roads. Noted Dec. 13.

Ill., Kankakee—City rejected bid paving East Court St. from Chicago Ave. east to city limits. New bids. About $55,500. Noted July 26.

Ill., Springfield—City plans to pave 7½ mi. of streets. Following are streets to be paved: Monroe St. from Spring to 10th Sts.; Capital Ave. from 2nd to 10th Sts.; 5th St. from Monroe to Capital Ave.; 6th St. from Monroe to Jackson Sts.; Jefferson St. from 5th to 7th Sts.; Washington St. from 4th to 10th Sts.; Adams St. from 4th to 10th Sts.; 2nd St. from Monroe to Madison Sts.; Washington St. from 2nd to 4th Sts.; Clear Lake Ave. from 19th St. to Monroe Heights addition; Jefferson St. from 10th St. to Clear Lake Ave.; Cass St. from 8th to 9th Sts.; Vine St. from Pasfield St. to Grand Blvd.; College St. from Laurel to Ash Sts.; Hough St. from 5th to 6th Sts.; Whittier Ave. from Laurel to Ash Sts.; 2nd St. from Laurel to Ash Sts.; Woodlawn Ave. from Walnut St. to Grand Blvd.; Rafter St. from 3rd to 5th Sts.; Miller St. from 7th to 13th Sts.; and Carpenter St. from 7th to 19th St. W. D. Seeley, city engr.

Ill., Toledo—Cumberland Co. voted $95,000 bonds to construct concrete road on Old Natl. Highway in addition to $231,000 appropriated by State and Federal authorities. Noted Sept. 27.

Wis., Racine—Racine Co. voted $75,388 bonds to build roads during next year. State and Federal Government to appropriate toward cost. Cost about $300,000.

Minn., Red Wing—Goodhue Co. rejected bids graveling 7 mi. Red Wing-Meisvile Highway, from Dakota Co. line to Welch Twp. New bids in spring. Noted Nov. 15.

Minn., St. Paul—City plans to pave Portland Ave. About $53,642. H. W. Austin, purch. agt., O. Claussen, city engr.

Minn., Winona — City plans to pave about 15 blocks. J. H. Protz, mayor.

Kan., Lawrence—Douglas Co., Lawrence and Shawnee Co., Topeka, lets contract about Mar. 1, building cement road from Ft. Leavenworth to Ft. Riley, 27 mi. long, 18 ft. wide. Noted Oct. 25.

Kan., Norton—City plans to pave streets in business section. J. Jackey, supt. streets.

Mo., Malden—City plans to pave about 14 blocks. S. L. Downing and P. Bartmess, purch. agts.

Mo., St. Joseph—Council passed ordinance to pave 31st St. from Jules to Sylvanie Sts.; asphaltic concrete, grading 4th St. from Hyde Park Ave. to Prindle St.; 20th St. from Walnut St. to Commercial Sts.; 15th and 16th Sts. from Jules to Faraon Sts.; Logan St. from St. Joseph Ave. to 9th St. C. P. Hoff, city engr.

Arkansas — (Official) — State Highway Dept., Little Rock, will receive bids about Mar. 1, building 20 mi. macadam road, 14 ft. wide in Carroll Co. from Eureka Springs through Green Forest and Alpena to Green Co. line. About $158,000. W. Hight, asst. highway engr. Noted Dec. 13.

Tex., Franklin—Robertson Co. plans election to vote on $75,000 bonds to build roads.

Tex., Gonzales—(Official)—Gonzales Co. voted $75,000 bonds to build and improve highways. Address W. B. Brookes, Waelder. Noted Dec. 6.

Tex., Hillsboro—(Official)—Hill Co. plans election soon to vote on bonds for 3 concrete highways through county. About $1,250,000. R. T. Bierns, co. judge.

Tex., La Grange—(Official)—Fayette Co. election Jan. 15 to vote on $100,000 bond issue to build roads in Distr. No. 1. Address J. C. Baumgarten, Schulenburg.

Tex., Montague — (Official) — Montague Co. defeated $300,000 bonds to build roads. Noted Dec. 6.

Tex., Palestine—Anderson Co., Elkhart Dist., voted $40,000 bonds to improve roads.

Tex., Roby—Fisher Co. defeated $250,000 bonds to build roads. Noted Nov. 29.

Tex., Texarkana—City plans to pave 3 blocks with brick. W. Haynes, city engr.

Idaho, Council—Adams Co. voted $80,000 bonds to build State Highways and $20,000 bonds for other road improvements.

Ariz., Nogales—Santa Cruz Co. election Jan. 23, to vote on $175,000 bonds to build roads.

Wash., Garfield — (Official) — City sold $20,000 bonds to build streets and sidewalks. Noted Dec. 13.

Wash., North Yakima—Yakima Co. plans to spend $80,000 to build roads during 1918. State will appropriate toward cost.

Wash., Tacoma—Pierce Co. soon lets contract building 1¼ mi. road connecting West Pioneer Ave. at Puyallup city limits to present Hill Rd. About $27,000. J. R. O'Farrell, comr.

Wash., Waterville — (Official) — Douglas Co. receives bids about Mar. 18, building Permanent Highway No. 4A, 1¼ mi. long involving grading, draining and surfacing with crushed rock. About $10,194. R. Foster, co. engr. Noted Nov. 29.

Wash., Wenatchee—Chelan Co. plans to build 16 mi. road known as Blewett Pass Rd., 16 ft. wide.

Cal., Fresno—Bd. Supervs. Fresno Co. plan election to vote on $500,000 bonds, of which $425,842 will be used to build highway from Hanford to San Lucas through Coalinga. Surplus will be used in improving other county roads. D. M. Bernwell, co clk.

Cal., San Diego — City Council passed resolution to improve Jackdaw, Hunter, Hawk and Arcadia Sts., including cement pavement with asphalt surface, cement curbs, sidewalks and gutters, metal culverts, watermains, etc. G. Cromwell, city engr.

N. S., Stellarton—Street Com. plans to spend $50,000 to build streets and sidewalks. J. T. McLellan, chn.

BIDS DESIRED

Fla., Quincy — Until Jan. 8, by J. P. Smith, city clk., building 23,000 sq.yd. sheet asphalt, concrete or brick pavements. J. B. McCrary Co., 3rd National Bank Bldg., Atlanta, Ga., engrs. Noted Nov. 22.

Louisiana — Until Jan. 7, by State Bd. Engrs., New Orleans, building 1.69 mi. New Orleans-Pydras Highway, gravel. D. Bule, state highway engr.

Michigan—(Official) — Until Jan. 3, by State Highway Comn., Lansing, building 14.1 mi. stone and gravel road, including grading, surfacing and culverts in Osceola Co. Noted Dec. 13.

Mich., Lansing—(Official)—Until Jan. 21, by City, for asphaltic cement for year 1918. J. A. Parsons, clk. Advertised in this issue.

O., Portsmouth—(Official)—Until Jan. 7, by Scioto Co. Comrs., building 3510 ft. road, 16 ft. wide, involving 1 acre guttering, 1889.8 cu.yd. excav., 2453.9 cu.yd. embankment, 20.4 cu.yd. masonry and 56 ft. 15-30-in. culvert pipe. J. J. Harper, engr.

Okla., Sapulpa—(Official)—Until Jan. 9, by R. E. Jenness, city clk., paving, curbing, guttering, draining, grading and installing sewer pipes in Mission St. and Lincoln Ave. About $40,000. R. M. Whittelsey, city engr. Noted Dec. 13.

California—(Official)—Until Jan. 7, by State Highway Comn., 515 Forem Bldg., Sacramento, grading 3.7 mi. road in San Diego Co. 3 mi. east of Willows and Sweetwater River, involving 55,250 cu.yd. excav. without classification, 135 cu.yd. Class "A" portland cement concrete (culverts and monuments); 160 cu.yd. dry rubble masonry (retaining wall). G. R. Winslow, highway engr.

PRICES AND CONTRACTS AWARDED

(★Indicates award of contract)

★W. Va., Charleston—Kanawha Co. let contract improving section Giles, Fayette and Kanwha Turnpikes, including 1726 cu.yd. concrete, 16,400 lb. reinforcement; 744 ft. 12-in. and 162 18-in. culvert pipe, to Central Eng. Co., Lee and Dickson Sts. Noted Nov. 8.

★Ala., Geneva—(Official) — Geneva Co. let contract building portion Samson & Opp Rd., part of State Trunk No. 12, to Crawley & Co., Banks, $17,757. Noted Nov. 29.

★Tenn., Greenville—Greene Co. let contract grading about 175 mi. earth road and macadamizing 147 mi., to Mann Contr. Co., at following unit prices; earth, 28c. per cu.yd.; loose rock, 40c. cu.yd.; solid rock, 89c. cu.yd.; macadam, $1.82 cu.yd.; concrete, $11 cu.yd.; paving, $2 cu.yd.; riprap, $2 cu.yd.; lumber, $40 per M. About $510,000. Noted Aug. 30.

★O., Newark—(Official)—Licking Co. let contract grading and improving Sects. 25 and 26 of Jersey Summit Rd., 2.22 mi. long, 16 ft. wide, involving 15,847 cu.yd. grading and 20,765 sq.yd. macadam, to Purdum & Schwartz, Shepard, $31,576.

★Ind., Anderson—Madison Co. Comrs. let contract paving Meridian Ave., stanolind asphalt, to Indiana Asphalt Paving Co., 25th St. and Lake Erie & Western Ry., Indianapolis, $61,000. Noted Dec. 20.

Ind., Elkhart—City received low bids paving Franklin and Michigan Sts., from Northern Constr. Co., Elkhart, and Williston Constr. Co., South Bend. About $40,000 available for work. Noted Dec. 20.

Streets and Roads (Continued)

Ind., Indianapolis—City received low bids resurfacing South St. from Virginia to Capitol Aves., (a) first grade wooden block, (b) second grade block, (c) granite block, from Public Constr. Co., (a) $6.83; Union Asphalt Constr. Co., 308 American Central Life Bldg., (a) $7.65; J. E. McNamara Constr. Co., (b) $4.90; A. D. Bowen, (b) $5.39; Union Stone & Material Co., 1007 Gilbert Ave., Cincinnati, O., (b) $6; (c) $7.72; S. M. Timberlake Constr. Co., 236 American Life Bldg., (a) $6.81. Noted Aug. 23.

★**Mich., Wyandotte** — City let contract paving Spruce, Cedar, Cherry, Orchard, Forest and Plum Sts., to J. H. Baker Co., 1454 Penobscot Bldg., Detroit, $130,000. Noted Nov. 8.

★**Neb., Columbus**—(Official) — City let contract for 29,528 sq.yd. bitulithic pavement, to W. Horribeu, 1422 Walnut St., Iowa City, Ia., $2.35 per sq.yd. Noted Dec. 20.

★**Mo., Jefferson City** — (Official)—Cole Co. let contract improving portions of Henley and Marys Home Rd., Hough Park Dr., Osage Bend and Williams Ferry Rds., Russellville-Centertown Rd., Boonville and Decatur Rds., and roads in Rd. Dist. No. 9, to Pope Constr. Co. and L. Brunner, both of Jefferson City, $17,563. Noted Nov. 26.

★**Utah**—(Official)—State Highway Comn., Salt Lake City, had plans prepared rebuilding 15 mi. highway through Juab and Millard Cos. and highway bridge over Sevier River. About $11,500. Work to be done by day labor. Noted Dec. 13.

★**Ariz., Yuma**—City let contract improving 1st, 2nd, 3rd and Court Sts., including grading, curbing, culverts, sidewalks, guttering and building 6789 lin.ft. 1½ in. bitulithic pavement on 4 in. bituminous base, to O & C Constr. Co., Yuma. About $58,077.

Washington — State Highway Comn., Olympia, received lowest bid moving 1800 ft. North Bank track of Southern Pacific R.R. system around bluff between Collins and Cooks to open up State Rd. No. 8, Skamania Co., from Porter Bros., Ry. Ex. Bldg., Portland, Ore., $18,673. Noted Nov. 29.

★**Washington** — State Highway Comn., Olympia, let contract building 5¼ mi. Pacific Highway between Woodland and Martins Bluff in Cowling Co., to L. H. Goerig, Seattle. About $80,007. Noted Nov. 20.

Oregon — State Highway Comn., 1301 Yeon Bldg., Portland, received low bids grading portion Pacific Highway in Clackamas Co. between Canemah and New Era, from Clackamas Co. Court, $34,765; Warren Constr., Journal Bldg., Portland, $48,577; United Contract Co., North Western Bank Bldg., Portland, $49,732.

Cal., Calexico — City received bids improving several streets from G. R. Daley, McNeece Bldg., San Diego, $174,322; Federal Constr. Co., Sharon Bldg., San Francisco, $186,427; Bryant & Austin, 1650 Compton Ave., Los Angeles, $188,855. Noted Dec. 6.

★**Cal., Daly City**—City let contract grading and building asphaltic concrete pavement, concrete sidewalks and gutters and installing vitr. pipe sewers on several streets, to H. Crummey Co., Inc., Hearst Bldg., San Francisco. About $19,820.

★**Cal., San Diego**—City let contract laying 77,706 sq.ft. asphalt pavement, concrete base, cement sidewalks, curbs, etc. in National Ave., from 13th to 16th Sts., to Fairchild-Gilmore-Wilton Co., Pacific Electric Bldg., Los Angeles. About $14,614. Noted Dec. 20.

★**Cal., San Francisco**—(Official)—State Bd. Harbor Comrs., Sacramento, let contract paving embarcadero with bituminous concrete and basalt blocks to P. J. McHugh, 3rd and North Mercer Sts., Seattle, Wash., $14,974. Noted Dec. 20.

RAILWAYS—STEAM & ELECTRIC

Proposed Work

Pennsylvania—Lykens Valley Ry. plans to rebuild 2½ mi. of track and build extension from Tower City to Reiner City. J. Oenslager, Jr., 711 North 3rd St., Williamstown, secy.

Georgia—Columbus R.R. plans to rebuild about 2 mi. of track. Stone & Webster, 147 Milk St., Boston, genl. mgrs.

Florida — Miami Traction Co., Miami, plans to build 4 mi. line between Miami and Miami Beach. J. R. Tatum, 212 12th St., secy.

Alabama—Stouts Mountain & Hanceville R.R. plans to build 6 mi. line between Hanceville and Stouts Mountain. C. F. Wheelock, Amer. Trust Bldg., Birmingham, interested.

Louisiana—New Orleans Ry. & Light Co., New Orleans, plans to rebuild 5.7 mi. of track. M. S. Doan, 201 Baronne St., genl. mgr.

Kentucky—South Covington & Cincinnati Street Ry., Covington, plans to rebuild 2.4 mi. of track. W. W. Tripp, ch. engr.

Ohio—Cincinnati Traction Co. plans to rebuild 8 mi. of track and build 2.44 mi. new track. A. Benhan, Traction Bldg., Cincinnati, genl. mgr.

Ohio—Portsmouth Street R.R. & Light Co. plans to build 2 mi. line between Portsmouth and Union Mills. R. D. York, Portsmouth, genl. mgr.

Indiana — Terre Haute, Indianapolis & Eastern Ry. plans to rebuild 4 mi. of track. T. R. H. Daniels, Terminal Bldg., Indianapolis, ch. engr.

Illinois—Chicago & Interurban Traction Co., 914 Borland Bldg., Chicago, plans to rebuild 4 mi. of track. W. Crawford, secy.

Iowa—Sioux City Serv. Co. plans to rebuild 2½ mi. of track. M. W. Lake, Sioux City, ch. engr.

Texas—Bryan & Central Tex. Interurban Ry. plans to build 4 mi. line between Newsome and Wilcox. L. M. Levinson, Bryan, ch. engr.

Colorado—Colorado Springs & Interurban Ry., Colorado, plans to rebuild 4 mi. of track and build 1 mi. new track. W. Lloyd, 520 South Tejon St., secy.

California—United R.R. of San Francisco plans to rebuild about 5 mi. of track. W. Von Phul, genl. mgr.

Ontario—Ottawa Electric Ry. plans to rebuild 2 mi. of track. W. H. Baldwin, Middle St., Ottawa, ch. engr.

EXCAVATION AND DREDGING

Proposed Work

Minn., Granite Falls — Ditch — Yellow Medicine Co. receives bids in February building Judicial Ditches Nos. 8, 9 and 11. About $34,000. G. Wilson, co. aud. A. Youngdale, engr., prepared plans.

Mo., Harrisonville—Drainage—S. K. Hall, secy., Grand River D.D. of Cass and Bates Cos., rejected bids building 24 mi. open ditch, involving 2,800,000 cu.yd. excav., 10 lateral ditches involving 272,000 cu.yd. excav. G. Bird, Harrisonville, engr. New bids. Noted Oct. 25.

BIDS DESIRED

Miss., Phila.—(Official)—Drainage—Until Jan. 11, by A. D. Sharp, chn. Drainage Comn., of Kentawka D.D., Neshoba Co., building certain canals; advertised in this issue.

PRICES AND CONTRACTS AWARDED

(★Indicates award of contract)

★**Minn., Buffalo** — (Official) — Ditch — Wright Co. let contract building Co. Ditch No. 33, to Natl. Clay Wks., Mason City, Ia., $24,270. Noted Dec. 6.

★**Cal., El Centro**—(Official)—Irrigation—Imperial Irrigation Dist. let contract raising Salz Levee involving 240,000 cu.yd. excav. mostly by teams and scrapers, to L. Little, 27½c. per cu.yd. plus Mexican duties; Volcano Levee, involving 555,000 cu. yd. excav. by train and steam shovel, to R. Sherer & Co., Pacific Electric Bldg., Los Angeles, 48c. per cu.yd. plus Mexican duties. Noted Nov. 29.

INDUSTRIAL WORKS

Proposed Work

Mass., Everett — General Electric Co., River Rd., Schenectady, N. Y., plans to build 1-story foundry here. About $35,000.

N. Y., Brooklyn—Eastern Flexible Conduit Co., has increased its capital stock from $50,000 to $150,000 and plans addition.

N. Y., Brooklyn—L. Leavitt, 454 Driggs Ave., had plans prepared, 3-story, 100 x 125-ft. varnish factory. About $70,000.

N. Y., Brooklyn—N. Schwarstein, Manhattan Beach, having plans prepared by W. T. McCarthy, archt., 16 Court St., for 1-story, 120 x 164-ft. brick garage, West End Ave. About $50,000.

N. Y., Brooklyn—J. Sklar, 661 Willoughby Ave. had plans prepared by H. J. Nurick, archt., 892 Bway., for 1-story, 100 x 127-ft. garage. About $30,000.

N. Y., New York—J. Chatillon & Sons, 85 Cliff St., has increased its capital stock from $200,000 to $300,000 and plans addition.

N. Y., New York—Ess Eff Realty Co., had plans prepared by J. A. Hamilton, archt., 32 Bway., for 3-story garage. S. L. Frank, pres.

N. Y., New York—M. M. Ostrander, c/o H. L. Morris, 32 Liberty St., had plans prepared, for 2-story, 59 x 100-ft. brick garage on Alexander Ave. About $25,000.

N. J., Perth Amboy—American Smelting & Refining Co. having plans prepared by Goldberger & Griesen, archts., Raritas Bldg., for 2-story, 50 x 150-ft. addition. About $80,000. Noted May 3.

Pa., Chester—Lodge and Store—Knights of Columbus, c/o W. K. Mulford Co., 428 South 13th St., Phila., having plans prepared by C. W. Brazier, archt., Crozier Bldg., for 3-story. About $50,000.

Pa., East Liberty—(Pittsburgh P. O.)—Pennsylvania R.R. soon lets contract, 4-story, 418 x 506-ft. rein.-con. freight warehouse and 50 x 50-ft. office, Lambert St. A. C. Shand, Broad St. Sta., Phila., ch. engr.

Pa., North East—Blane-Mackay-Lee Co. plans to rebuild lumber mill recently destroyed by fire. About $100,000.

Pa., Pittsburgh — Happerbstall Forge & Knife Co., 47th and Hatfield St., plans 1-story, 130 x 108-ft. concrete and steel addition. About $40,000.

Pa., Pittsburgh—Thompson & Co. plans to rebuild storage house recently destroyed by fire. About $50,000.

Pa., Reading—Berks Eng. Co., 7th and Chestnut Sts., increased its capital stock from $25,000 to $150,000 and plans addition to machine shop.

Pa., Sharon—Standard Car Constr. Co., Columbia Bank Bldg., Pittsburgh, increased its capital stock from $1,000,000 to $2,000,000 and plans additions and improvements.

Md., Curtis Bay—Mann Shipbuilding Co. having plans prepared for addition. About $100,000. Address W. B. Mann, Ft. Light St., Baltimore.

Va., Alexandria—Amer. Shipbuilding Co., 1249 Kenyon St., N.W., Wash., D. C., purchased 30-acre site on Potomac River here and plans to build plant.

Va., Norfolk—Seaboard Ice & Cold Storage Co. plans 7-story factory, Division St. L. Feuerstin, pres.

Va., St. Paul — Clinch Valley Chemical Extract Co. recently incorporated with $5,000,000 capital stock, plans to build by-product factory.

W. Va., Huntington — Huntington Steel Products Co. plans to build large addition.

N. C., Asheville—H. B. Posey and associates plan to organize company with $100,000 capital stock and build cotton mill.

N. C., Marion—Crown Cotton Mills Co. will increase its capital stock from $50,000 to $150,000 and build addition.

Ala., Anniston — Louisville & Nashville R.R. plans to rebuild roundhouse recently destroyed by fire. Loss, $30,000. W. H. Courtenay, Louisville, ch. engr.

Tenn., Jackson—Southern Engine & Boiler Mfg. Co. increased its capital stock from $500,000 to $800,000 and plans additions.

Tenn., Nashville—Nashville, Chattanooga & St. Louis Ry. plans to build automatic coaling station. H. McDonald, Nashville, ch. engr.

Ky., Louisville—Louisville Planing Mill Co., Beach St., plans to rebuild sawmill, planing-mill and veneer plant recently destroyed by fire. About $60,000.

O., Bellefontaine—Cleveland, Cincinnati, Chicago & St. Louis R.R. plans extensive additions and improvements to repair shop here. C. A. Paquette, Cincinnati, ch. engr.

O., Canton—Buckeye Cereal Co. increased its capital stock from $100,000 to $300,000 and plans additions. E. M. Stultz, mgr.

Industrial Works (Continued)

O., Cleveland—(Official)—J. Heller, 2326 Lorain Ave., having plans revised by W. Markowitz, archt., 403 United Bank Bldg., for 3-story factory and store, $35,000. Noted Dec. 13.

O., Cleveland—Monarch Brass Co., East 45th and Payne Ave. soon lets contract for brick factory. About $50,000. Swartzenberg & Gaede, 1900 Euclid Ave., archts.

O., Cleveland—F. J. Vichek, E. A. Neckas and others organized company with $900,000 capital stock and plans to build 3-story factory, Quincy Ave. and Woodhill Rd.

O., Lima—Lima Rivet & Forgings Co., recently incorporated with $300,000 capital stock, plans new plant between Robb and O'Connor Aves., facing Jackson St. on Baltimore & Ohio right-of-way. About $30,000.

O., Sandusky—American Crayon Co. plans to build factory on 50-acre site.

Ind., Ft. Wayne — Haffner Baking Co. soon lets contract for 3-story, 45 x 90-ft. bakery. About $40,000. C. D. Cooley Co., Century Bldg., Pittsburgh, archts.

Ind., Hamilton—Standard Steel Co. plans factory. About $250,000.

Ind., Indianapolis—See "Buildings."

Ind., Peru—Model Gas Engine Co. plans addition. About $50,000.

Ind., Vincennes—Baltimore & Ohio R.R. plans freight depot, 1st and Scott Sts. About $100,000. H. A. Lane, Baltimore, Md., ch. engr.

Mich., Bay City—Industrial Works plans addition to foundry and 24 x 100-ft. canopy shop. About $50,000.

Mich., Traverse City — Boardman River Electric Light & Power Co. plans power plant and dam. About $200,000. Fargo Eng. Co., Jackson, engrs.

Ill., Chicago—H. G. Seal Co., 4410 Ravenswood Ave. represented by Roseberg & Reninger, 111 West Washington St., having plans prepared by W. T. Branitzky, archt., 54 West Randolph St., for 100 x 100-ft. factory, Ravenswood Ave. About $100,000.

Ill., Chicago—Stanley Motors Car Co., 2101 Indiana Ave., having plans prepared by Holabird & Roche, archts., 104 South Michigan Ave., for 3-story, 50 x 181-ft. garage and service station. About $55,000. F. Jay, mgr.

Ill., Edwardsville—Liberty Steel Co. recently incorporated with $1,000,000 capital stock, plans to build factory. S. F. Lloyd, pres.

Wis., Eau Claire — Northwestern Motor Co. plans to build new plant. About $75,000. K. Rosholt, pres.

Wis., Milwaukee—Milwaukee Paper Box Co., 400 Florida St., had plans prepared by Schetzky & Son, archts., for 5-story, 100 x 150-ft., South Pierce St. and Muskego Ave. About $150,000. W. C. Carlson, pres.

Wis., Milwaukee — Schlitz Brewing Co., 3rd and Galena St., plans 2-story, rein.-con. bottle warehouse, Walnut and 2nd Sts. About $40,000.

Wis., Milwaukee — M. Tullgren & Sons, archts., Majestic Bldg., soon lets contract, 2-story, 50 x 62 ft. rein.-con. and brick factory, 121 14th St., for Standard Ice Cream Co.

Wis., New Holstein—J. Lauson Mfg. Co. increased its capital stock from $500,000 to $1,000,000 and plans addition.

Wis., West Allis—(Milwaukee P. O.)—A. G. Schulz Co., 417 Clybourn St., Milwaukee, purchased 9-acre site here and plans to build new plant. About $350,000.

N. D., Valley City—E. G. Pegg having plans prepared by R. B. Stacy-Judd, archt., Minot, for 1-story, 75 x 130-ft. rein.-con. garage. About $25,000.

Mo., St. Louis—Laclede Gas Light Co., 11th and Olive Sts., purchased 200 x 756-ft. site and plans to build storehouse, meter repair-shop and garage. About $400,000.

Tex., Lucas—Gulf Pipe Line Co., Beaumont, plans to build 1-story, 36 x 40-ft. concrete and galvanized iron oil-burning plant to replace steam station. About $61,637.

Okla., Blackwell—Blackwell Mill & Elevator Co. plans to rebuild elevator recently destroyed by fire. About $100,000.

Okla., Miami—Maxine Mining Co. recently incorporated with $250,000 capital stock, plans to build 500-ton mill. F. Snoemaker, pres.

Wash., Everett—Norway Pacific Constr. and Dry Dock Co., Seattle, plans to build shipbuilding plant here. About $1,500,000. M. G. Thomas, pres.

Ore., Portland—G. M. Standifer Constr. Co., Northwest Block Bldg., plans shipbuilding plant on Columbia River. About $750,000. G. M. Standifer, pres.

Cal., Fresno—Valley Ice Co. plans 1-story, 60 x 150-ft. rein.-con. addition. About $75,000.

Cal., Hanford—California Peach Growers, Inc., plans to build plant here. About $25,000. J. F. Niswander, vice pres. and genl. mgr.

Cal., Los Angeles—City plans to build power plant No. 2. About $750,000. Andrew C. Hansen, city engr.

Cal., San Bernardino — Pacific Electric Ry. soon lets contract, 100 x 190-ft. concrete and brick repair shop and car barn. M. C. Halsey, 695 Pacific Electric Bldg., archt.

Cal., Visalia—F. H. Whipple plans garage, Main and Bridge Sts. About $30,000.

N. B., St. John—Imperial Oil Co., Ltd., 7 Nelson St., had plans prepared for warehouse. About $50,000.

Que., Maisonneuve — Canadian Machine Co. plans to build factory here. About $250,000.

B. C., Vancouver—Schaake Eng. Co. plans to build first unit of large machine shop. About $46,750.

BIDS DESIRED

N. Y., Chenango Bridge—See "Buildings."

Cal., Palmdale—(Official)—Until Jan. 7, by Bd. Supervs. Los Angeles Co., Los Angeles, building maintenance warehouse here. H. J. Lelande, clk.

PRICES AND CONTRACTS AWARDED

★**Conn., Waterbury**—International Silver Co. let contract 1-story, 45 x 79-ft. power house and tunnel, to L. A. Miller, 21 Church St., Meriden, $25,000.

★**Pa., Pittsburgh**—Miller-Owen Electric Co. let contract 1-story, 40 x 200-ft. warehouse, to H. S. Kesuler, 3301 Penn Ave., $40,000. Noted Nov. 29.

★**Pa., Steelton**—John Hoffer Flouring Mill Co. let contract 5-story, 50 x 70-ft. brick mill, to F. E. Hollenback, 1804 Brandywine St., Phila., $50,000. Noted Dec. 6.

★**Wash., D. C.** — Piedmont Mount Airy, Guano Co., Keyser Bldg., Baltimore, let contract for fertilizer building here, to C. L. Stockhausen Co., Inc., Marine Bank Bldg., Baltimore, $60,000.

★**O., Columbus**—Blue Valley Creamery Co., 196-206 South Lazelle St., let contract 3-story, 36 x 150-ft. factory, to E. H. Latham, Columbus Savings and Trust Bldg., $100,000. Noted Dec. 6.

★**O., Dayton**—Wright Aeroplane Co. let contract 1-story, 300 x 1000-ft. addition, to F. H. Smith, Inc., 120 Bway., New York City, $100,000.

★**O., Hamilton**—(Official) — Liberty Machine Tool Co. let contract, 1-story, 100 x 200 ft. brick and rein.-con. machine shop, to F. K. Vaughn Bldg. Co., 204 Rentschler Bldg., $40,000.

★**O., Xenia**—Hooven Allison Co. let contract for 2 additions, to Blanchard Bldg. Co., Dayton, $100,000.

★**Mich., Battle Creek**—Armour Grain Co., 208 South La Salle St., Chicago, let contract 5-story, 85 x 120-ft. factory, to Witherspoon Englar Co., 53 West Jackson Blvd., Chicago. About $500,000. Nov. 15.

★**Mich., Detroit**—Simmons Bed Co., Kenosha, Wis., let contract 1-story, 120 x 150-ft. warehouse, to F. J. Whitney, 1443 Grand River Ave., $30,000.

★**Ill., Chicago**—Hotel La Salle Co., La Salle and Madison Sts., let contract for warehouse and garage, to G. A. Fuller Co., 140 South Dearborn St.

★**Ill., Chicago**—Natl. Beverage Co., 1900 West 18th St., let contract for 1- and 2-story, 70 x 75-ft. alteration to storage building, to Scown Bldg. Constr. Co., 36 West Randolph St., $35,000.

★**Minn., Minneapolis**—Minneapolis Industries Assn., 1232 1st Natl. Soo Line Bldg., let contract 3-story, 80 x 500-ft. warehouse, to Splady Albee & Smith, 1022 Plymouth Bldg., $100,000.

★**Minn., Minneapolis**—See "Buildings."

★**Neb., Omaha**—A. Murphy & Sons, 14th and Jackson Sts., let contract, 3-story, 66 x 132-ft. factory, to G. Parsons, 616 Keeline Bldg., $40,000.

★**Mo., St. Louis**—Wagner Electric Co., 6400 Plymouth Ave., let contract 1-story, 130 x 512-ft ammunition plant, to W. M. Sutherland Bldg. & Contr. Co., Syndicate Trust Bldg., $60,000.

★**Cal., Hanford**—F. N. Isaac let contract, 1-story, 125 x 150-ft. garage, Irwin and 8th Sts., to Trewhitt & Shields, Fresno, $25,000.

★**Ont., Toronto**—Canadian Aeroplane Co., Dufferin St., let contract addition, to Jackson Lewis Co., Ltd., Bell Telephone Bldg., $30,000.

BUILDINGS

Proposed Work

Mass., Wellesley—Church and Parish House — Congregational Church Society having plans prepared by Carrere & Hastings, archts., 52 Vanderbilt Ave., for 1½-story, 75 x 120-ft. About $100,000. C. N. Taylor, chmn. bldg. comn.

Conn., Waterbury — Hospital — Waterbury Hospital had plans prepared by H. Bacon, archt., 1001 Park Ave., New York, building addition. J. S. Eaton, res.

Conn., Waterbury — Hotel — Connecticut Owning Co. having plans prepared by G. Keister, archt., 56 West 45th St., New York City, for 10-story, brick and steel. M. E. Keeley, pres.

Pa., East Liberty—(Pittsburgh P. O.)—(Office)—See "Industrial Works."

Pa., Phila.—Library—Phila. Free Library having plans prepared by P. H. Johnson, archt., 51st and Chester Sts. About $50,000.

Pa., Pittsburgh—Nurses' Home—St. Margaret's Memorial Hospital, 265 46th St., soon lets contract, 4-story, 35 x 115-ft. addition. E. J. Edsall, supt. F. E. Billquist, Vandergrift Bldg., archt. Noted Oct. 18.

Pa., Titusville—Bank—Titusville Trust & Safe Deposit Co., having plans prepared by A. C. Bossom, archt., 466 5th Ave., New York City. Cost between $75,000 and $140,000. Address J. C. McKinney, Southern Penn. Oil Co., Commercial Bank Bldg.

Del., Milford—Armory—State soon receives bids for 2-story, brick and stone. L. W. Crawford, Equitable Life Bldg., Wilmington, archt.

Wash., D. C. — College — Notre Dame School for Girls, North Capitol and K Sts., having plans prepared by F. G. Pierson, archt., Washington Loan & Trust Bldg., for 2-story. About $100,000.

Wash., D. C.—Theater — T. Moore, c/o Garden Theater, 432 9th St., N. W., plans to build 4 theaters; 3 will cost $200,000 and 1 $350,000. Blanke & Zink, archts., Equitable Bldg., Baltimore, will receive bids about Jan. 1.

Va., Rosslyn—Exchange—Chesapeake & Potomac Telephone Co., 5 Light St., Baltimore, Md., had plans prepared by McKenzie, Voorhees & Gmelin, archts., 1123 Bway., New York City, for 1-story, brick to be erected here.

W. V., Keyser — Administration — State Bd. Control, 405 Capitol St., Charleston, receives bids about Feb. 1, 3-story. About $60,000. J. S. Lakin, pres. P. A. Davis, 1713 Sansom St., Phila., archt.

W. Va., Moundsville — High and Grade School—Bd. Educ. had plans prepared by C. W. Bates, archt., Natl. Bank Bldg., Wheeling. About $90,000.

N. C., Kingston — School—City election Jan. 1, to vote on $150,000 bonds to build school.

Ga., Lyons — Courthouse — Toombs Co. had plans prepared by A. Blair, archt., Macon, rebuilding courthouse recently destroyed by fire. About $50,000.

Buildings (Continued)

Fla., Miami—Hotel—Casa Grande Hotel Co. had plans prepared by Howell & Thomas, archts., 2023 Euclid Ave., Cleveland. About $500,000. Address G. H. Burrows, 526 Guardian Bldg., Cleveland.

Miss., Corinth—Court House—Alcorn Co. having plans prepared by N. W. Overstreet, archt., for brick and stone. About $100,000.

Miss., Poplarville—Courthouse — Pearl River Co. having plans prepared by P. J. Krouse, archt., Miazzo-Woods Bldg., Meridian. About $50,000.

Ky., Bowling Green—Hospital—City and Warren Co. plan. About $50,000.

O., Canton—School—Bd. Educ. will sell $190,000 bonds for school in Southwest section.

O., Cincinnati—Banquet Hall and Auditorium—City having plans prepared by Elmer & Anderson, archts., Citizens Bldg., for 2-story, 78 x 115-ft. and 45 x 125-ft. About $125,000.

O., Cleveland—(Official) — Office A. M. Allen Co., archts., 301-1900 Euclid Bldg., preparing plans for 2-story office building. About $325,000. Owner's name withheld.

O., Cleveland — Office — Physicians and Surgeons Exchange Co., 10310 Churchill St. having plans prepared by Allen & Osborne Co., archts., 700 Rose Bldg., for 16-story, Chester Ave. and East 13th St. About $1,000,000.

O., Cleveland—Store — See "Industrial Works."

O., Columbus—Courthouse—Franklin Co. having plans prepared by D. A. Riebel, archt., for 4- or 5-story addition. Cost between $111,000 and $137,000.

O., Columbus—Hospital—McKinley Hospital soon lets contract, 6-story, 45 x 93, and 45 x 100-ft. About $75,000. Stribling & Lum, 540 Denig Ferson Bldg., archts. Noted July 19.

O., East Liverpool—School — Bd. Educ. having plans prepared by C. M. Metsen, archt., 1st Natl. Bank Bldg., for 55 x 70-ft., on Pleasant Heights. About $50,000.

O., Painesville—School—St. Mary's congregation soon lets contract for 1- and 2-story, 90 x 168 ft. About $50,000. C. R. Greco, 729 Guardian Bldg., Boston, Mass., archt.

O., Toledo—Clubhouse — Sylvania Golf Club plans. About $50,000. H. W. Wachter, trustee.

O., West Liberty—(Official)—School—Bd. Educ. Logan Co., receives bids about Jan. 1, for 2-story, 55 x 101-ft. brick and rein.-con. in Monroe Twp. About $45,000. E. H. Walkins, Jr., pres. E. H. Rickett, 274 East 12th Ave., Columbus, archt.

O., Wooster—Bank and Office—Peoples Savings & Loan Co., c/o Henry & Murphy, archts., 523 2nd Natl. Bank Bldg., Akron, having plans prepared, 5-story, 48 x 58 ft. About $70,000.

O., Zanesville—Y. M. C. A. having plans prepared by C. D. McLane, archt., 301 Robinson Bldg., Rock Island, Ill., and A. A. Hanson, assoc. archt., 313-320 Peoples' Bank Bldg., Zanesville. About $200,000.

Ind., Gary—Hotel—Atlas Bldg. and Investment Co., 670 Washington Ave. soon lets contract for 3-story, 150 x 150-ft. About $120,000. P. F. Olson, 127 North Dearborn St., Chicago, archt.

Ind., Indianapolis—Medical School, etc.—Indiana University, 102 North State St., having plans prepared by B. F. Daggett, archt., 956 Lemcke Annex Bldg., for medical school power house and laundry buildings. F. F. Rose, Muncie, chmn. bd. trustees.

Ind., Rockport — Court House—Spencer Co. having plans prepared by E. E. Dunlap, archt., 909 State Life Bldg., Indianapolis. About $125,000. A. B. Branch, co. aud.

Mich., Detroit—Hospital — Bd. Health, 233 St. Antoine St., having plans prepared by W. B. Stratton and D. J. Schneider, archts., 117 Union Trust Bldg. About $1,000,000. J. F. McKinley, secy.

Mich., Jackson—Hotel — General Hotels Co. having plans prepared by Essenwein & Johnson, archts., 781 Ellicott Sq., Buffalo, N. Y. About $500,000. A. Essenwein, dir.

Ill., Centralia—Hospital — United Mine Workers' Union of America plans. About $50,000.

Ill., Chicago — Church and Colleges — Lombard Theological College, Galesburg, plans 4 buildings, 60th St. and Dorchester Ave. here. About $250,000.

Ill., Chicago—Church—English Lutheran congregation, 2122 Sunnyside Ave., having plans prepared by E. E. Roberts, archt., 82 West Washington St. About $50,000. S. S. Kauffman, rector.

Ill., Chicago—Hotel, Store and Theater—Amalgamated Theater Corp., 6 South Wabash Ave., having plans prepared by C. W. & G. L. Rapp, archts., 60 West Washington St., for 5-story. About $750,000. B. Bolahan, pres.

Ill., Sullivan — Home — Masonic Grand Lodge of Illinois plans 3-story, brick and rein.-con. addition to Old Folks Home. About $60,000. W. A. Dixon, supt.

Ia., Des Moines—Hospital—City General Hospital plans 5-story, 45 x 143-ft., East 12th and Des Moines Sts.

Minn., Duluth—High School—Bd. Educ. soon lets contract for 3-story, 66 x 180-ft. About $120,000. Croft & Boerner, Fidelity Bldg., archts.

Minn., Hastings—Asylum — State plans addition and alteration to west wing. About $60,000. C. H. Johnston, 715 Capital Bank Bldg., St. Paul, archt.

Minn., Hibbing—School—Bd. Educ. having plans prepared by W. T. Bray, archt., 1200 Fidelity Bldg., Duluth, for 2-story, 60 x 80-ft. addition. About $50,000.

Minn., Minneapolis—Church—3rd Church Christ Scientist, 650 McKnight Bldg., having plans prepared by S. S. Beman, archt., for 2-story. About $75,000. A. P. Abell, member bldg. com.

Minn., Minneapolis — School — Bd. Educ. receives in January for 3-story, 75 x 130-ft. brick addition. About $95,000. Tyrie & Chapman, Auditorium Bldg., archts.

Minn., Wells—High School — Bd. Educ. having plans prepared by F. W. Kinney, archt., Plymouth Bldg., for 1-story, 60 x 144 ft. About $60,000.

Minn., Willmar—High School—Bd. Educ. having plans prepared by Tyrie & Chapman, archts., 320 Auditorium Bldg., for 3-story, 75 x 130-ft. addition. About $95,000.

Kan., Abilene—School — Dickinson Co. sold $90,000 bonds and will soon let contract for school.

Kan., Atchison—Hospital—Atchison Hospital Assn. having plans prepared by W. A. Saylor, archt., 606 Gumbel Bldg., Kansas City, Mo. for addition. About $75,000.

Kan., Junction City—School—City plans election to vote on $100,000 bonds to build 2 schools. W. L. Phillips, clk.

Kan., Winfield—Hospital — St. Mary's Hospital, 1210 East 9th St., had plans prepared by J. M. Fuller, archt., Crowley Bank Bldg., Wichita, for 3-story, 34 x 120-ft. About $60,000.

Mont., Missoula — Theater — Missoula Theater Co., East Main St., plans. About $90,000.

Mo., Kansas City—Club — Kansas City Athletic Club soon lets contract on 11th St. and Baltimore Ave. About $1,000,000. A. Young, chn. bldg. com.

Okla., Oklahoma — School — State had plans prepared by J. Hicks, archt., Capitol, Durant, for medical school. About $200,000.

Okla., Pauls Valley—High School—City plans election to vote on $50,000 bonds for school.

Okla., Tulsa — Terminal — Atchison, Topeka & Santa Fe R.R. having plans prepared. About $800,000. C. F. W. Felt, Chicago, ch. engr.

Colo., Alamogordo — High School — Bd. Educ. had plans prepared by Trost & Trost, archts., 817 Mill Bldg., El Paso, Tex. About $58,500.

Cal., Los Angeles — High School — Bd. Educ. having plans prepared by N. F. Marsh, archt., 211 Bway., Central Bldg., for 2-story, 84 x 102-ft. brick and concrete addition to Hollywood High School. About $55,000.

Que., Quebec—Exposition — Comn. Provisional Exposition had plans prepared by L. Auger, archt., St. John St. About $500,000.

BIDS DESIRED

Vt., Springfield — (Official) — Hospital—Until Jan. 5, by H. L. Walker, archt., 19 West 44th St., New York City, 2-story, 40 x 65-ft. for Springfield Hospital. About $50,000. Noted Dec. 20.

N. Y., Chenango Bridge—(Official)—Hospital—Until Jan. 7, by Bd. Supervs. Broome Co., building 2 story tuberculosis hospital, including 2 patients pavilions, administration building, power house and garage. About $130,000. W. H. Whitlock, 602 Security Mutual Bldg., Binghamton, archt.

Wis., Waukesha — High School — Until Jan. 15, by Bd. Educ. for 3-story, 127 x 218-ft. addition. About $150,000. A. S. Putney, 423 Main St., pres. Van Ryn & De Gelleke, Caswell Blk., Milwaukee, archts.

Minn., Duluth—(Official)—School—Until Feb. 15, by Bd. Educ., for school, 8th Ave. and 13th St. About $100,000. Croft & Boerner, 301 Palace Bldg., Minneapolis, archts. Noted Dec. 13.

Kan., Peabody—(Official)—High School—Until Jan. 3, by Bd. Educ., for 2-story, 65 x 110-ft. addition. About $50,000. Crowell & Van Meter, 604 Murdock Bldg., Wichita, archts. Noted Dec. 13.

PRICES AND CONTRACTS AWARDED

(★Indicates award of contract)

★**Mass., Haverhill**—Hospital — City let contract, 3-story, 40 x 140-ft. and 1-story, 25 x 50 ft., to J. M. Roche, 665 Primrose St., $75,000. Noted Nov. 22.

★**N. Y., New Hampton**—(Official)—Reformatory—B. G. Lewis, comr. correction, Municipal Bldg., New York City, let contract construction of reformatory, including cubicle and infirmary dormitories, laundry, storage and industrial buildings, to J. T. Brady, 103 Park Ave., New York City. About $300,000. Noted Dec. 6.

★**O., Akron**—High School—Bd. Educ. let contract for 2- or 3-story, to Carmichael Constr. Co., 524 Hamilton Bldg., $262,328. Noted Dec. 6.

★**O., Coshocton**—Bank—Commercial Natl. Bank Bldg., let contract, 1-story, 21 x 100-ft., to S. Watertown Co., 343 South Dearborn St., Chicago, $60,000.

★**Kan., Clyde** — School — Bd. Educ. let contract 2-story, 81 x 112-ft. brick, to Sanneman Bros. Constr. Co. About $50,000.

★**Neb., Randolph**—Church—Frances De Choutal congregation let contract to J. J. Smith Constr. Co., 815 5th St., Sioux City, Ia. About $50,000. Noted July 5.

★**Mo., St. Joseph** — (Official) — Store—J. Geiger, 614 Francis St., let contract, 5-story, 107 x 123-ft. brick and rein.-con., to Sawhon Stamey Co., 212 North 7th St., $200,000. Noted Dec. 13.

★**Okla., Sapulpa** — High School — Bd. Educ. let contract, 3-story, brick, stone and rein.-con. to Manhattan Constr. Co., 3rd and Fond du Lac Sts., Muskogee. About $200,000. Noted Nov. 8.

★**Ont., Toronto**—School—Bd. Educ. let contract rein.-con. addition, to H. Lucas & Son, 141 Havelock St. About $90,000.

FEDERAL GOVERNMENT WORK

Proposed Work

N. J., Woodbury—Post Office—J. A. Wetmore, superv. archt., treas. dept., Wash., rejected bids opened Nov. 23, as all were in excess of appropriation. Noted Nov. 29.

Pa., Phila.—Temporary Storage Building—Bids will soon be received at Navy Yard, Phila.; Specification No. 2575.

Md., Annapolis — Outside Distributing Systems—Bureau Yards and Docks, Navy Dept., Wash., plans. About $25,000; Specification No. 2754.

Md., Baltimore—Quartermaster's Warehouse—I. Littell, Brig. Gen., War Dept., Wash., plans.

W. Va., Charleston—Pit for Furnace—Bureau Yards and Docks, Navy Dept., Wash., plans rein.-con. pit for furnace. About $18,000; Specification No. 2756.

Ill., Chicago—Quartermasters Warehouse—I. Littell, Brig. Gen., War Dept., Wash., plans.

Federal Government Work (Continued)

BIDS DESIRED

Mass., **Chelsea**—Hospital—Until Jan. 14, by Bureau Yards and Docks, Navy Dept., Wash., building at Naval Sta. About $15,000; Specification No. 2751.

N. Y., **Brooklyn**—Power House Superstructure—Until Jan. 7, by Bureau Yards and Docks, Navy Dept., Wash., building at Navy Yard, Brooklyn; Specification No. 2585.

Del., **Wilmington**—Dredging—Until Jan. 11, by U. S. Engr. Office, Old Federal Bldg., Wilmington, dredging Inland Waterway between Rehoboth Bay and Delaware Bay. Noted Sept. 13; advertised in this issue.

O., **Cincinnati**—Lock Gates—Until Jan. 18, by U. S. Eng. Office, Cincinnati, furnishing, delivering and erecting gates for locks Nos. 33 and 39, Ohio River.

Colo., **Denver** — Excavators — Until Feb. 5, by U. S. Recl. Serv., Denver, furnishing dragline excavators. A. P. Davis, ch. engr.

Cal., **San Pedro**—Distribution System—Until Jan. 3, by Constructing Quartermaster, 1206 Pacific Ave., San Pedro, building gas and water distribution systems at Ft. MacArthur.

PRICES AND CONTRACTS AWARDED

(★Indicates award of contract)

★**Pa., Phila.**—Quartermasters Warehouse—I. Littell, Brig. Gen., War Dept., Wash., let contract to W. Steele & Son, 30 South 15th St., Phila., cost plus percentage.

★**Kan., Ft. Leavenworth**—Military Prison—I. Littell, Brig. Gen., War Dept., Wash., let contract addition, to R. P. Yoakum, Ft. Leavenworth. About $500,000, cost plus percentage.

★**Tex., Ft. Worth**—Experimental Station—Brig. Genl. I. Littell, War Dept., Wash., and not Bureau of Yards and Docks, let contract to Bryce Bldg. Co., 909 Throckmorton St. About $1,000,000; cost plus percentage.

MISCELLANEOUS

Proposed Work

Dock Wall—Canandaigua, N. Y.—(Official)—W. W. Wotherspoon, supt. pub. wks., Capitol, Albany, soon receives bids for concrete dock wall at Lake Harbor, Ontario Co., involving 1200 cu.yd. excav. and backfill, 610 cu.yd. second-class concrete, 7.5 M ft. B.M. sawed lumber, 111 M ft. B.M. wooden sheet piling, 8500 lb. iron and steel fastenings, 1800 lb. metal reinforcement and cutting off tops of piles.

Incinerator Plant—Menominee, Mich.—City plans.

Dam—Traverse City, Mich.—See "Industrial Works."

Transmission Line — Alameda, Cal. — Southern Pacific Co., San Francisco, plans power transmission line to operate electric system. About $60,000. W. Hood, ch. engr.

Dyke—Ft. Frances, Ont.—Ontario & Minnesota Power Co. having plans prepared for dyke. About $50,000.

BIDS DESIRED

Intake Pier — Tonawanda, N. Y. — See "Water-Works."

Piers—Phila., Pa.—(Official)—Until Jan. 8, by G. S. Webster, dir. dept. Wharves, Docks and Ferries, building Pier No. 78, South, Moyamensing Group in Delaware River, foot of McKean St.; advertised in this issue.

Harbor Improvements — Mobile, Ala. — Until Feb. 11, by H. Pillans, comr. of Docks and Wharves, building wharf and bulkhead on Arlington Dock site involving 5720 lin.ft. yellow pine piling, 20-55 ft. long; 7200 lin.ft. on top of bulkhead; 8000 lin.ft. bulkhead and 2,624,000 ft. sheet piling. Wright Smith, city engr. Noted Sept. 6.

Retaining Wall—California—See "Streets and Roads."

PRICES AND CONTRACTS AWARDED

(★Indicates award of contract)

★**Bulkhead and Wharf—Provincetown, Mass.**—S. Skaroff & Sons, Railroad Ave., let contract to Kendle-Stoddard Co., 271 Marginal St., Chelsea, $150,000.

★**Tunnel — Waterbury, Conn.** — See "Industrial Works."

★**River Channel Improvements — Columbus, O.**—(Official) — G. A. Bordea, dir. pub. serv., let contract widening Scotia River involving 1,960,500 cu.yd. excav., 34,000 cu.yd. concrete, 9800 lin.ft. concrete toe wall, 36,100 sq.yd. concrete revetment, 50,000 cu.yd. solidified embankment, 377 M ft. B. M. sheet piling, 33,500 lin.ft. wood piling, 1,340,000 lb. reinforcing steel, 1370 lin.ft. steel curb, 3000 lin.ft. concrete curb, 15,000 sq.ft. cement walk, 2600 sq.yd. stone block paving, 6600 cu.yd. gravel fill, 3000 tons riprap, 6050 sq.yd. waterproofing, 10,700 sq.ft. sidewalk finish, 80 lin. ft. 15 in. pipe drain, 36,100 sq.yd. stone revetment, bridges sluice gates, manholes, etc. to W. E. Callahan Constr. Co., 1517 City Natl. Bank Bldg., Omaha, Neb., $1,993,775. Noted Dec. 13.

NASSAU COUNTY, NEW YORK, TO SPEND $104,000 ON ROADS

Forty-two roads in the Town of Hempstead will be improved during the coming year at an expense of $104,000. Archibald G. Patterson, Town Superintendent of Highways, has entered into a contract with the Town Board for the improvement of these roads. Twenty thousand dollars more will be spent for oiling Peekskill gravel and dirt roads. Another allowance is also made for the upkeep of all roads in the town, which means in short that 1000 miles of roadway will be maintained at $50 a mile.

The roads to be improved throughout the town are as follows:

Rita Ave., New Hyde Park, Jericho Turnpike to the L. I. R.R. tracks, 1200 ft., with Peekskill gravel at a cost of $1500.

Waverly Ave., Seaford, from Jackson Ave. to the Seaman Neck Rd., 1200 ft., with Peekskill gravel, at a cost of $1500.

Oak Ave., South Hempstead, from the Baldwin Rd. to Nassau Rd., 900 ft., with Peekskill gravel, at a cost of $1000.

Henry St., Valley Stream, from Hendrickson Ave. to the Comstock property, 2000 ft., with Peekskill gravel, at a cost of $2200.

Railroad Ave., West Hempstead, from Hempstead Ave. to the Hempstead Gardens station, 1800 ft., with Peekskill gravel, at a cost of $1800.

Chestnut St., West Hempstead, from Hempstead Ave. to Woodfield Rd., 2000 ft., with Peekskill gravel, at a cost of $2000.

Lincoln Ave., Roosevelt, from Mansfield Ave. to Fire Engine House, 1250 ft., with Peekskill gravel, at a cost of $1500.

Leonard Ave., Roosevelt, from Nassau Rd. to Fire Engine House, 1200 ft., with Peekskill gravel, at a cost of $1300.

Newbridge Rd., Bellmore, from Merrick Rd. to Grand Ave., 1500 ft., with Peekskill gravel, at a cost of $1800.

Wilson Ave., Wantagh, from the brook to Park Ave., 1000 ft., with Peekskill gravel, at a cost of $1000.

Lord Ave., Inwood, from Bayview Ave. to L. I. R.R. Depot, 650 ft., concrete, at a cost of $5200.

Oceanside Rd., Oceanside, from Foxhurst Rd. to John Higgins' corner, 1800 ft., with Peekskill gravel, at a cost of $2200.

Brower Ave., Oceanside, from Grand Ave., leading to the Oaks, 1500 ft., with Peekskill gravel, at a cost of $2000.

Clinton Rd., Garden City, from Long Island Motor Parkway to the Old Country Rd., 3100 ft., with Peekskill gravel, at a cost of $6000.

Meadowbrook Rd., Merrick, from Hempstead-Babylon Turnpike to Washington Ave., 4500 ft., with Peekskill gravel, at a cost of $5000.

Main St., Hempstead, from the Garden City line to the village of Hempstead line, 500 ft., with Peekskill gravel, at a cost of $500.

Jefferson Pl., South Hempstead, from Graham to Elizabeth Ave., 500 ft., with Peekskill gravel, at a cost of $600.

Milburn Ave., Baldwin, from Church St. to the creek, 3200 ft., with Peekskill gravel, at a cost of $4760.

Oceanside Ave., or Lower Lincoln Ave., Oceanside, from Long Beach Rd. to Rockaway Rd., 1200 ft., with warrenite, at a cost of $8000.

Front St., Hempstead, from the west village line to Hempstead Ave., 150 ft., with warrenite at a cost of $1100.

Washington Ave., Seaford, from L. I. R.R. tracks, leading to the Hidelberg property, 1000 ft., at a cost of $1000.

Everitt's Lane, Malverne, from Hempstead Ave., to Ocean Ave., 3000 ft., with Peekskill gravel, at a cost of $400.

Bloomingdale Ave., East Meadow, from Galleweilder's corner to the Oyster Bay town land, 2500 ft., with Peekskill gravel, at a cost of $3000.

East Broadway or Seaman's Neck Rd., Central Park, from the Oyster Bay town line to Alfred M. Suydam's property, 2500 ft., with Peekskill gravel, at a cost of $3000.

Grove St., south, Valley Stream, from Forest Ave. to Rockaway Ave., 1200 ft., with Peekskill gravel, at a cost of $1500.

Dogwood Ave., Munson, from John St., leading to Rasweiler's farm, for one mile, with Peekskill gravel, at a cost of $7000.

Carman Ave., East Meadow, from 1000 ft. north of Dutch Lane to Old Country Rd., 2500 ft., with Peekskill gravel, at a cost of $2500.

North Jerusalem Rd., Island Trees, from Garner's farm to Bellmore Ave., one-half mile, with Peekskill gravel, at a cost of $3500.

Uniondale Ave., Uniondale, from Catholic Church property to Jerusalem Ave., 2500 ft., with Peekskill gravel, at a cost of $3000.

Valley Stream Blvd., Valley Stream, from Rockaway Ave. to Central Ave., 2000 ft., with Peekskill gravel, at a cost of $2500.

Fulton Ave., Roosevelt, from Nassau Rd. to Centennial Ave., 2000 ft., with Peekskill gravel, at a cost of $2500.

Whitehouse Ave., Roosevelt, from Nassau Rd. to Charles St., 2000 ft., with Peekskill gravel, at a cost of $2200.

Charles St., Roosevelt, from Whitehouse Ave. to Woods Ave., 800 ft., with Peekskill gravel, at a cost of $800.

Woods Ave., Roosevelt, from Nassau Rd. to Charles St., 1400 ft., with Peekskill gravel, at a cost of $1800.

Newbridge Rd., Bellmore, from Bellmore Ave. to Heck's farm, 2000 ft., with Peekskill gravel, at a cost of $2500.

Bellmore Ave., Bellmore, from the Merrick Rd. to the Bellmore Dock, 2000 ft., with Peekskill gravel, at a cost of $2500.

Wantagh Ave., Wantagh, from Newbridge Rd. to Schneider's store, 400 ft., with Peekskill gravel, at a cost of $4000.

Mill Rd., Wantagh, from Wilson Ave. to Ryder's Gardens, 1500 ft., at a cost of $2000.

School St., Wantagh, from Clark Ave. to the schoolhouse, 1000 ft., with Peekskill gravel, at a cost of $1000.

Railroad Ave., West Hempstead, from Hempstead Gardens station to the L. I. R.R. property, 3000 ft., with Peekskill gravel, at a cost of $3200.

Beverly Ave., West Hempstead, from Jerusalem Ave. to Front St., 2500 ft., with Peekskill gravel, at a cost of $3000.

Cruikshank Ave., South Hempstead, from Franklin St. to the Hempstead village line, with Peekskill gravel, for 1000 ft., at a cost of $1000.

BARGE CANAL WORK, ALBANY, N. Y.

Contract 181

Bids were received by W. W. Wotherspoon, supt. pub. wks., Capitol, for repairing and waterproofing existing concrete lining and placing new concrete lining in canal at Little Falls, from (A) Law Bros., Herkimer; (B) Dale Eng. Co., Inc., 23 Mann Bldg., Utica; (C) P. B. McCaghey Co., 569 East Main St., Little Falls; (D) Shay Contg. Co., 23 Down Bldg., Albany, $71,711; (E) Peckham Constr. Co., Inc., Mutual Life Bldg., Buffalo, $77,969. The unit bids of the 3 lowest bidders were as follows:

	A	B	C
2,400 cu.yd. excavation	$1.25	$3.00	$2.00
900 sq.yd. removing existing concrete lining	1.00	3.00	2.00
800 cu.yd. first-class concrete	15.00	15.00	20.00
2,100 cu.yd. second-class concrete	11.00	12.50	14.50
840 lb. wire mesh reinforcement	.10	.15	.12
76,000 sq.ft. waterproofing	.17	.21	.20
Cofferdams, pumping, bailing and draining (lump sum)	800.00	2,500.00	500.00
200 drilling holes in concrete lining	1.00	2.50	1.50
Extended totals	$54,694	$69,321	$71,139

Contractors Constructing the Cantonments

National Army Cantonments

Approximately $8,000,000 each

Camp	Contractor
Devens, Ayer, Mass.	Fred T. Ley Co., Inc.
Upton, Yaphank, L. I.	Thompson-Starrett Co.
Dix, Wrightstown, N. J.	Irwin & Leighton
Meade, Admiral, Md.	Smith, Hauser, MacIsaac
Lee, Petersburg, Va.	Rinehart-Dennis Co.
Jackson, Columbia, S. C.	Hardaway Construction Co.
Gordon, Atlanta, Ga.	Arthur W. Tufts Co.
Sherman, Chillicothe, Ohio	A. Bentley & Sons
Taylor, Louisville, Ky.	Mason & Hanger
Custer, Battle Creek, Mich.	Porter Bros.
Grant, Rockford, Ill.	Bates, Rogers Con. Co.
Pike, Little Rock, Ark.	Jas. Stewart & Co.
Dodge, Des Moines, Iowa	Chas. Weitz's Sons
Funston, Fort Riley, Kan.	Geo. A. Fuller Co.
Travis, Ft. Sam Houston, Tex.	Stone & Webster
Lewis, American Lake, Wash.	Hurley, Mason & Co.

National Guard Camps

Approximately $2,000,000 each

Greene, Charlotte, N. C.	Consolidated Eng. Co.
Wadsworth, Spartanburg, S. C.	Fiske, Carter Con. Co.
Hancock, Augusta, Ga.	T. O. Brown & Son
McClellan, Anniston, Ala.	J. O. Chisalm & Co.
Sevier, Greenville, S. C.	Gallivan Bldg. Co.
Wheeler, Macon, Ga.	W. Z. Williams Co.
McArthur, Waco, Tex.	F. H. Jones Con. Co.
Logan, Houston, Tex.	American Con. Co.
Cody, Deming, N. M.	J. W. Thompson
Doniphan, Ft. Sill, Okla.	Solden-Breck Con. Co.
Bowie, Ft. Worth, Tex.	J. W. Thompson
Sheridan, Montgomery, Ala.	A. Blair
Shelby, Hattiesburg, Miss.	J. S. Moody & Co.
Beauregard, Alexandria, La.	Stewart McGhee
Kearney, Linda Vista, Calif.	W. E. Hampton
Fremont, Palo Alto, Calif.	Lindgren & Co.

Miscellaneous Cantonments

Merrit, Tenafly, N. J.	MacArthur Bros.
(Work done in conjunction with Port Newark, N. J.)	
Johnston, Black Point, Fla. (Completed)	A. Bentley & Sons
Ordway, Washington, D. C. (Completed)	P. F. Gormiley Co.

Ordnance Department Depots

Port of Embarkation, Newport News, Va. (Completed; cost in millions)	Westinghouse, Church, Kerr & Co.
Port Newark Terminal, Newark, N. J. (Work underway; cost in millions)	MacArthur Bros.
Ordnance Depot, Raritan River, N. J. (Approximately $6,000,000)	Snare & Triest Co.
Munition Storage, Turner Station, Md.	F. B. Watts Co.
Ordnance Depot, Curtis Bay, Md. (Approximately $3,000,000)	Smith, Hauser, MacIsaac
Ordnance Depot, Pig Point, Va. (Approximately $500,000)	Jas. T. Stewart & Co.

Coast Artillery Posts

Fort Wright, New London, Conn.	Sperry Eng. Co.
Fort Terry, New London, Conn. ($196,000)	Sperry Eng. Co.
Forts Totten, Hamilton, Hancock, Wadsworth and Schuyler, in New York ($654,000)	Turner Const. Co.
Fort Dupont, Del. ($21,800)	Horace H. Jackson
Fort Howard, Md. ($65.400)	Consolidated Eng. Co.
Fort Monroe, Va. ($87,200)	Hampton Roads Eng. and
Fort Caswell, N. C. ($65,400)	Constr. Co.
Fort Taylor, Key West, Fla., Dade, Tampa, Fla. ($65,400)	W. R. Richardson
Fort Rosecrans, Calif. ($109,000)	W. E. Hampton & Co.
Fort McArthur, Calif. ($196,200)	W. E. Hampton & Co.
Fort Winfield Scott, Calif. ($196,200)	Dinwiddie Constr. Co.
Fort Stevens, Ore. ($65,400)	Dinwiddie Constr. Co.
Fort Columbia, Wash. ($43,600)	Dinwiddie Constr. Co.
Fort Canby, Wash. ($43,600)	Dinwiddie Constr. Co.
Fort Worden, Wash. ($109,000)	Dinwiddie Constr. Co.
Fort Casey, Wash. ($109,000)	Sound Cons. and Eng. Co.
Fort Flagler, Wash. ($109,000)	Sound Cons. and Eng. Co.
Fort Tilden, N. Y. ($21,800)	Jas. Stewart & Co.

Mobile Ordnance School Barracks

Peoria, Ill. (Approximately $10,000)	F. B. Hasbrouck
Kenosha, Wis. (Approximately $10.000)	Paschen Bros.
Clintonville, Wis. (Approximately $10,000)	Henry C. Lengstock

Medical Department

Extensions to General Hospital No. 1, New York City	Wm. Crawford
Fox Hill Property, Staten Island, N. Y.	Not awarded
Camp Mills, Mineola, L. I.	Not awarded
Otisville, N. Y.	Abandoned; could not secure site
Iselin, Rahway	Not awarded
Fort McHenry, Baltimore	Not awarded
Billings Estate, on Hudson	Not awarded
Soldiers' Home, Washington, D. C.	Not awarded

Hospitals Proposed and Under Construction

These hospitals will be extended wherever practical for use as reconstruction hospitals.

BASE HOSPITALS AT CANTONMENTS

NATIONAL ARMY

Camp Lewis, American Lake, Wash.
Camp Meade, Annapolis, Junction
Camp Gordon, Atlanta, Ga.
Camp Devens, Ayer, Mass.
Camp Custer, Battle Creek, Mich.
Camp Jackson, Columbia, S. C.
Camp Dodge, Des Moines, Iowa
Fort Riley, Kansas
Camp Travis, Fort Sam Houston, Texas
Camp Pike, Little Rock, Ark.
Camp Taylor, Louisville, Ky.
Camp Lee, Petersburg, Va.
Camp Grant, Rockford, Ill.
Camp Dix, Wrightstown, N. J.
Camp Upton, Yaphank, L. I.

NATIONAL GUARD

Camp Beauregard, Alexandria, La.
Camp McClellan, Anniston, Ala.
Camp Hancock, Augusta, Ga.
Camp Green, Charlotte, N. C.
Camp Cody, Deming, N. M.
Camp Doniphan, Fort Sill, Okla.
Camp Bowie, Fort Worth, Texas
Camp Sevier, Greenville, S. C.
Camp Shelby, Hattiesburg, Miss.
Camp Logan, Houston Texas
Camp Kearney, Linda Vista, Cal.
Camp Wheeler, Macon, Ga.
Camp Sheridan, Montgomery, Ala.
Camp Wadsworth, Spartanburg, S. C.
Camp McArthur, Waco, Texas

U. S. GENERAL HOSPITALS

No. 1—Gun Hill Rd. & Bainbridge Ave., Williamsbridge, N. Y.
No. 2—Ft. McHenry Md.
Walter Reed General Hospital, Tacoma Park, D. C.
Fort Bayard, New Mexico
Army & Navy Gen. Hospital, Hot Springs, Ark.
Letterman General Hospital, San Francisco, Calif.

U. S. A. BASE HOSPITALS

Fort Des Moines, Iowa
Madison Barracks, N. Y.
Fort McPherson, Ga.
Fort Oglethorpe, Ga
Fort Ontario, N. Y.
Plattsburg Barracks, N. Y.
Fort Logan H. Roots Little Rock, Ark.
Fort Sam Houston, Texas
Fort Sheridan, Chicago, Ill.
Fort Sill, Okla.
Fort Snelling, Minn.
Van Couver Barracks, Washington

U. S. ARMY CAMP HOSPITALS

Camp Bartlett, Westfield, Mass.
Base Hospital
Camp Merritt, Tenafly, N. J.
Base Hospital
Camp Mills, Garden City, L. I.
Base Hospital
Camp Stuart, Newport News, Va.

U. S. A. BASE HOSPITAL

Fort Benj. Harrison, Ind.
Fort Bliss, Texas

Proposed Sites for Reconstruction Hospitals

Fox Hill Property, Staten Island
Billings Estate, On Hudson

NOTE.—Other sites will be selected and new hospitals erected. There are 200 projected, to accommodate 70,000 men.

Volume 79 Number 26

Engineering News-Record

A CONSOLIDATION OF ENGINEERING NEWS AND ENGINEERING RECORD

E. J. MEHREN, *Editor*

December 27, 1917

What Is Mill Building Construction? 1184
By F. W. Dean.
An Exposition of the Essentials governing this type of fire-resisting building and of the details that distinguish it.
Engineering News-Record, Dec. 27, 1917. 11¼ cols. Ill.

Philippine City's Lowland Raised by Harbor Dredging 1189
By W. C. A. Palmer.
Valuable River-Front Property in Iloilo developed by selling fill to private owners and by creating public areas.
Engineering News-Record, Dec. 27, 1917. 3 cols. Ill.

Building Frame Houses for Miners as a Contract Job 1191
By C. S. Rindsfoos.
Several Hundred Just Completed for West Virginia company—Model single house designed—Field methods used.
Engineering News-Record, Dec. 27, 1917. 4¼ cols. Ill.

Two Methods of Maintaining Gravel Roads in Maine 1193
Density of Traffic is criterion—Chief reliance is placed on annual tar treatment—Frost is worst enemy.
Engineering News-Record, Dec. 27, 1917. 3¾ cols. Ill.

Protecting Submerged Steelwork of Arch Bridge 1195
Ends of Steel Arches submerged by Government dam to be protected by enclosure wall and encasement with pitch.
Engineering News-Record, Dec. 27, 1917. 3 cols. Ill.

Five Million Yards Moved To Dam Three Rivers 1197
Structure for Bridgewater (N. C.) development built by hydraulic filling between outside embankments—Flow of two watersheds diverted on third.
Engineering News-Record, Dec. 27, 1917. 6 cols. Ill.

Activity in River Transportation Developed in 1917 1200
Work of Waterways Committee begins to tell—Barge lines starting on Mississippi—Attention to terminals.
Engineering News-Record, Dec. 27, 1917. 2¾ cols.

Syracuse Tests Two Methods of Sewage Treatment 1201
Activated-Sludge Process being studied alongside Dortmund tanks combined with aërated continuous gravel filters.
Engineering News-Record, Dec. 27, 1917. 1¼ cols.

New York Central Sets Long Plate Girder in Bridge 1202
Two Wrecking Cranes place 105-ton member, 131½ feet long and 10 feet deep, in complicated West Shore crossing.
Engineering News-Record, Dec. 27, 1917. 4 cols. Ill.

What Are the Limitations of Wood Pipe Under Fills? 1204
Failure Under 10-Foot Backfill emphasizes need for careful soil examination before specifying pipe strength.
Engineering News-Record, Dec. 27, 1917. 1½ cols.

Kankakee River Is Improved for Drainage of Marshes 1205
Channel Straightened and deepened will reclaim large area—Dipper-dredge excavation employed.
Engineering News-Record, Dec. 27, 1917. 2 cols. Ill.

Awakening Recognition of the Engineer 1206
A Canadian View which accords with progressive thought on this side of the international line.
Engineering News-Record, Dec. 27, 1917. 3 cols.

Panama Canal Slides Under Control 1207
Engineering News-Record, Dec. 27, 1917. 1 col.

Derrick Wrecks Concrete Building with Heavy Ball 1208
Roof and Floors shattered successively—Fire and torches help in breaking columns—Fire tried also on floors.
Engineering News-Record, Dec. 27, 1917. 3 cols. Ill.

City Management Does Not Mean Municipal Ownership 1209
H. M. Waite, city manager, Dayton, lays down reasons for coöperation between utilities and municipalities.
Engineering News-Record, Dec. 27, 1917. 1¼ cols.

Exhibit Board Educates Students in Current News 1210
Substantial, Expensive Construction made part of building to impress observers with importance of subjects.
Engineering News-Record, Dec. 27, 1917. 2½ cols. Ill.

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Letters to the Editor 1211
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James H. McGraw, President — Arthur J. Baldwin, Vice President and Treasurer — E. J. Mehren, Vice President — James H. McGraw, Jr., Secretary

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HAVEMEYER BAR SERVICE

Gives You the Steel When You Want It

CONCRETE STEEL COMPANY

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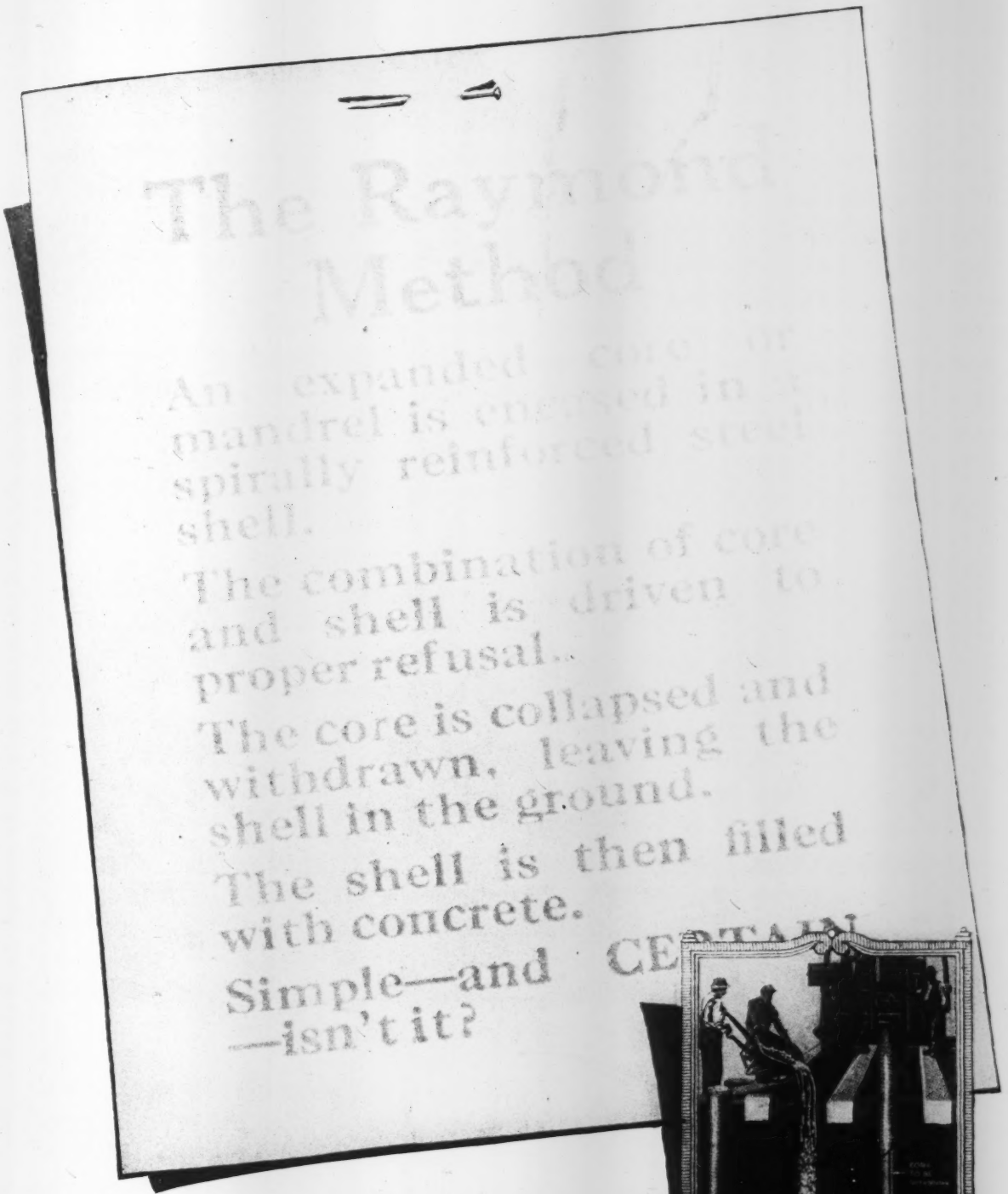
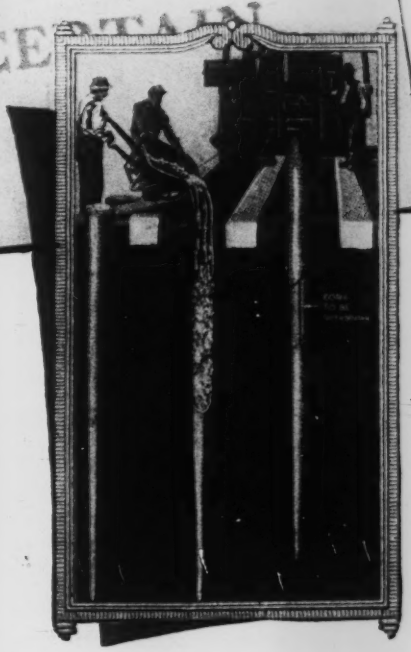




Raymond Concrete Pile Company

New York
140 Cedar Street

Branch Offices in all Principal Cities

Chicago
111 W. Monroe Street

Raymond Concrete Pile Company of Canada, Ltd., Montreal, Canada

"A Form for Every Pile—A Pile for Every Purpose"

REINFORCING STEEL IN STOCK

At Our Main Plant and Local Warehouses

A Friendly Word to Prospective Builders

Just now we are in good shape to promptly fill your orders for reinforcing steel for concrete, including **Kahn Bars, Rib Bars, Column Hooping, Floretyles, Rib Metal, Hy-Rib Metal Lath, Pressed Steel,** etc. We have stocks of steel at our main plant in Youngstown, Ohio, and at local warehouses in Boston, Mass., Philadelphia, Pa., Detroit, Mich., Chicago, Ill., Moline, Ill. and Portland, Oregon.

As is well known, the steel situation is critical; the demand for steel apparently greatly exceeds the supply. It is impossible to forecast how long we will be able to accept orders for steel. For this reason we are recommending to prospective builders that they figure out their future requirements and place orders at the earliest possible moment. We do not believe there is any prospect of lower prices in the near future, but feel that there is a positive danger of inability to secure steel at all.

Write, phone or telegraph us so we can quote on your requirements. We will also gladly furnish suggestions or be of any other service.

Reinforcing Steel Divison

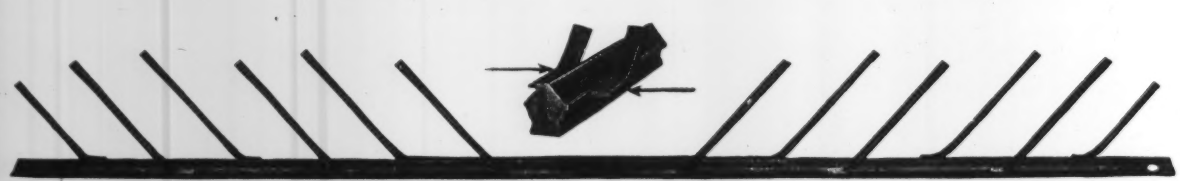
TRUSSED CONCRETE STEEL COMPANY

YOUNGSTOWN, OHIO

Representatives in Principal Cities

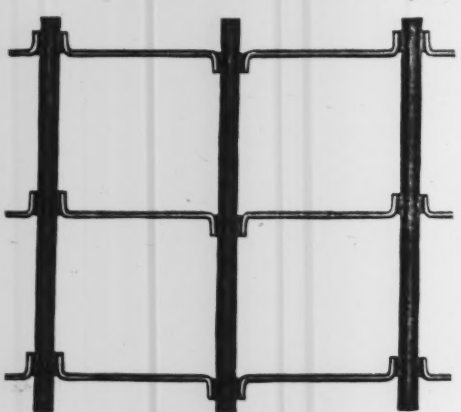
Warehouses at Boston, Mass., Philadelphia, Penna., Detroit, Mich., Chicago, Ill., Moline, Ill. and Portland, Ore.

KAHN Building Products



Kahn Trussed Bars. All sizes—all lengths—all types of shearing

RIB BARS. Straight or bent to requirements—stock or mill shipments—sizes ⅜ in., ½ in., ⅝ in., ¾ in., 1 in., 1¼ in. (same area as either square or round bar of same size—all lengths.



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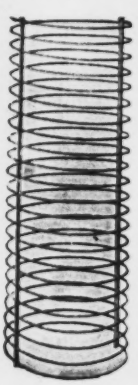

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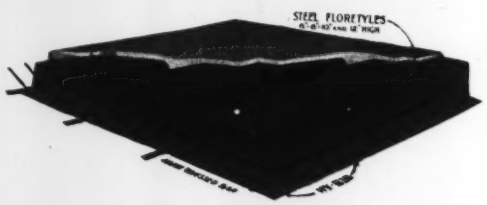
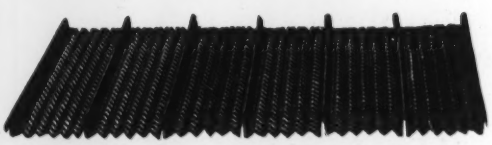


STEEL FLORETYLES.



HY-RIB. Four depths of ribs, ⅜ in., ⅝ in., ¾ in. and 1½ in.

Test

THE Carbic LIGHT
TRADE MARK

Buck it up against **working** conditions—rough handling by common laborers—regular work on a regular job.

Test the **quality** of the light. See the clean, clear flame of the CARBIC. See its **volume** and **purity**—free from smoke or soot.

TEST THE UNIFORMITY of light. There is no fluctuation in pressure on a CARBIC LIGHT from start to finish. There cannot be. Simple automatic control prevents.

TEST the convenience and economy of the CARBIC CAKE. It is clean and quick to handle. CARBIC CAKES slip in the holder in a jiffy. For a given volume of light they **cost less** per lighting hour—there is **no waste.**

The CARBIC CAKE is compact and concentrated. Unused or partly used CARBIC CAKES are removed from the light and stowed away for further service.

Give the CARBIC a **working** test. That's the way it has gained its prestige as the **Contractor's Light.** Write for full data today.

Carbic Manufacturing Co., Duluth, Minn.

Branch Offices:
Chicago: 53 Jackson Blvd.
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Carbic Cakes Save Money, Time and Patience

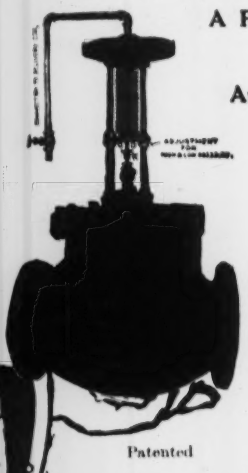
"Yes—They're the Valves I Want"

for many a vexatious problem in fire, sprinkler and other water distribution systems and a positive cure for all needless water waste due to overflow of Tanks, Standpipes and Reservoirs.

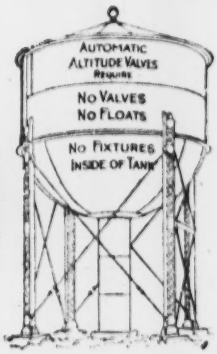
A POSITIVE WATER SUPPLY Absolutely Assured by

Golden-Anderson

Automatic Cushioned Controlling Altitude Valves



Patented



For automatically maintaining Uniform Stage of Water in Tank, Reservoir or Standpipes. Doing away with the annoyances of Freezing and Float Fixtures inside or outside of Tanks. "Three Ways of Closing These Valves."

1st—Automatically by Water.
2nd—By Electricity, if desired.
3rd—By Hand.

May also be arranged to automatically close when a break occurs in the mains. When necessary they may be so connected as to "work both ways" on a single line of pipe. Sizes up to 24 in.

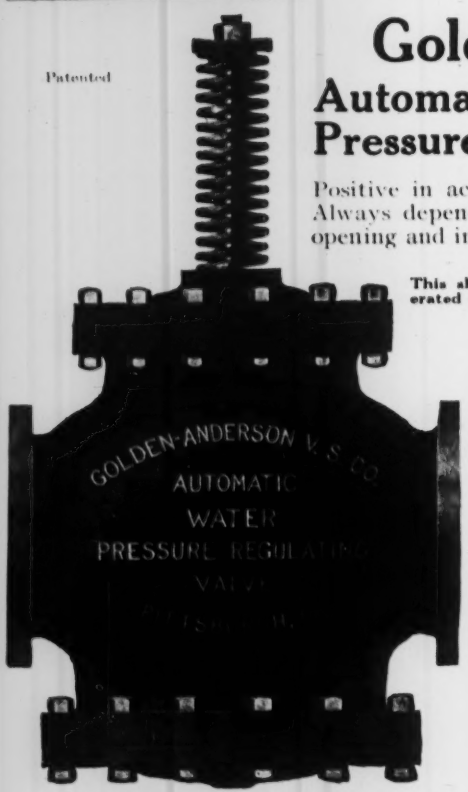
Valves Cushioned at all times by air and water
No water hammer or bursting mains
"NO METAL-TO-METAL SEATS"
Economic Sensitive Reliable
Virtually Indestructible

"Hosts of References"

Patented

Golden-Anderson
Automatic Cushioned Water Pressure Regulating Valves

Positive in action under every service condition. Always dependable. Perfectly cushioned both in opening and in closing. Made in sizes up to 24 in.



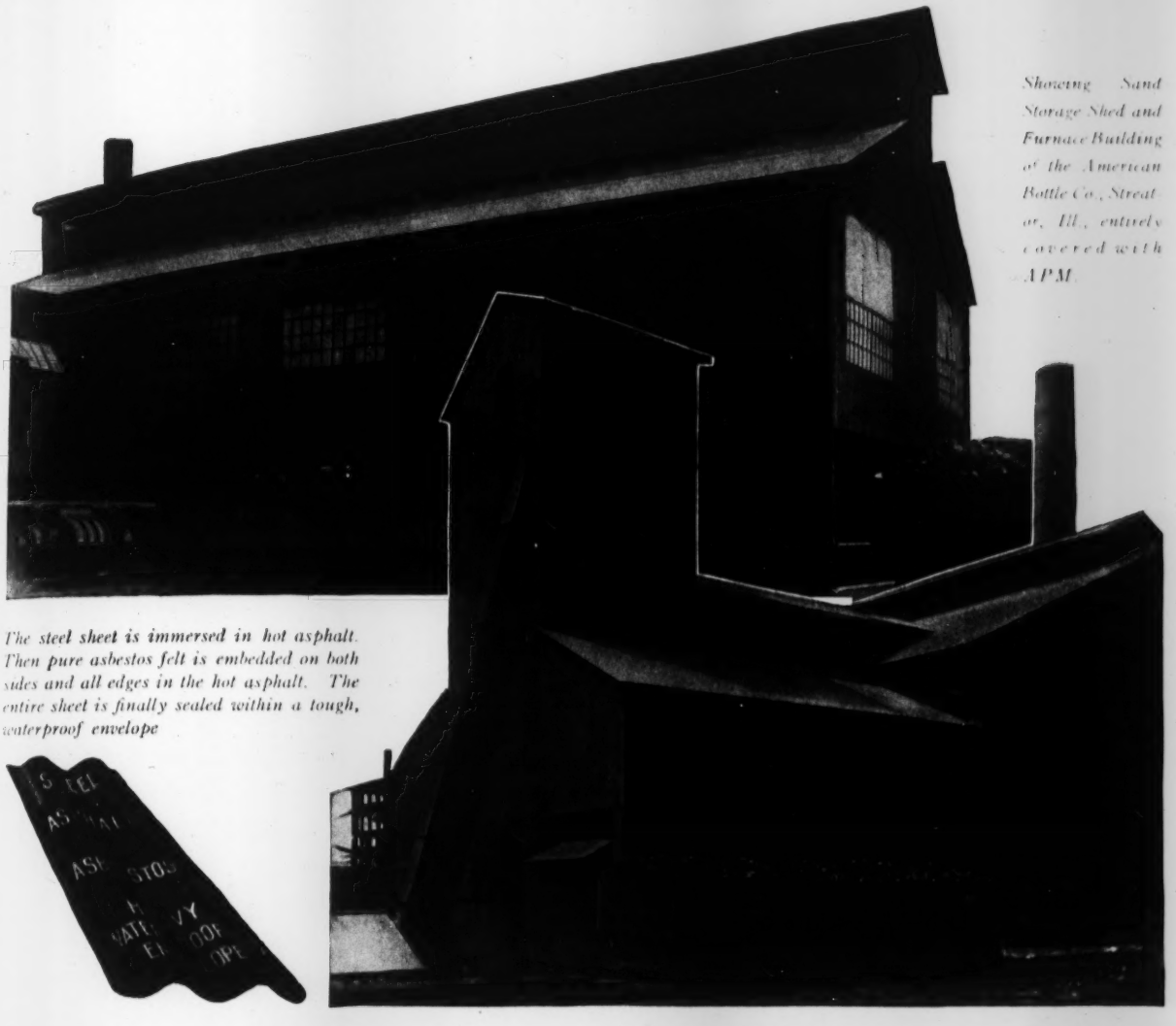
This shows the electrically-operated type "For Fire Service"

Fitted with a solenoid connected to a switch at any convenient point. In case of fire the valves are opened to full area. When full pressure is no longer required, by closing circuit a few seconds, pressing a button, the valves automatically return to normal position.

"Especially adapted for Water Works, Railroads and Industrial Plants" because of their correct mechanical construction and operation.

GOLDEN-ANDERSON VALVE SPECIALTY COMPANY

1202 Fulton Building, Pittsburgh, Pa.



Showing Sand Storage Shed and Furnace Building of the American Bottle Co., Streator, Ill., entirely covered with APM

The steel sheet is immersed in hot asphalt. Then pure asbestos felt is embedded on both sides and all edges in the hot asphalt. The entire sheet is finally sealed within a tough, waterproof envelope

Increased Construction Costs *Compel* more careful selection of materials

Higher prices for materials, and the increased wages and scarcity of labor make the selection of building materials a more important problem than ever before. The logical solution of this problem is the selection of *permanent* construction.

Asbestos Protected Metal

results in moderate-cost buildings involving neither maintenance nor depreciation charges. The steel core is permanently protected from rust and corrosion by moisture or acid fumes. Made in two permanent colors and never requires painting. THE FIRST COST IS THE ONLY COST.

Light as sheet steel but far more durable, APM saves the expense of heavy structural work. It can be applied to the lightest steel or wood purlins.

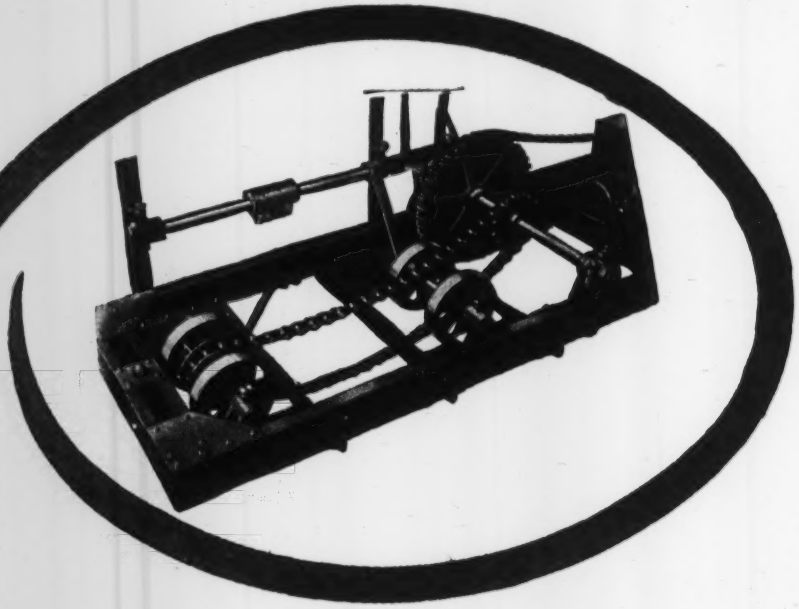
Bulletin 553 shows how you can increase the efficiency and decrease the expense of your next building. Write TODAY for your copy.

For Canada: Canadian Asbestos Co. Montreal

Asbestos Protected Metal Co.
Pittsburgh
First National Bank Building

Dock House Billeter Street London

2094



Send the Coupon for Folder

on

SMITH

UNDER-SLUNG CHAIN DRIVE

From dozens of contractors we have received indisputable evidence and proof of the success of the SMITH UNDER-SLUNG CHAIN DRIVE.

Invariably they report that it has forever eliminated all chain trouble. You see the chain doesn't go around but **passes under the drum.** The chain may stretch but it can never slip. The weight of the drum acts as a constant and automatic tightener.

You're not up on the latest development in mixers unless you know all about the SMITH UNDER-SLUNG CHAIN DRIVE. And the price is unusually low.

MAILING COUPON

Send me, without obligation on my part, copy of your

FOLDER NO. 154K-

describing your new 7-S Smith-Chicago Mixer with the UNDER-SLUNG CHAIN DRIVE.

Name .....

St. No. .....

City .....

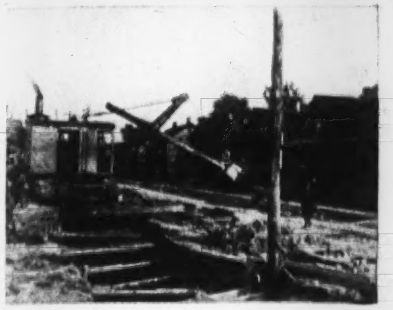
State .....

Send the coupono for full information.

The T. L. SMITH COMPANY
3104-K Hadley Street, Milwaukee, Wis.

Equipped with low-charging platform if desired.

Erie Revolving Shovels



"The gang all thought they were kids again"

Bill Muldoon Says:

"It was a cold Christmas up in Montana. The thermometer flirted with forty below, and the steam shovel gang all looked like stuffed sausages, their clothes were so thick.

Andy Sullivan had two good monthly estimates and he felt flush. So he orders a big turkey feed for the boys, with all the trimmings—including a big barrel of stick candy—the kind you used to like when you were knee high.

Do you know that gang cut up like they were kids? Some of the old stiffs even hung up their socks. And not a man called for his time or went to town. They ate candy and played around like a bunch of ten-year olds.

Old Andy was a good boss, and his gang certainly appreciated it. They felt thankful that Christmas—just the way WE are feeling now, here at the Ball Engine Co.

We're thankful for the way you contractors and engineers have given us orders for more and more ERIE SHOVELS. Ten ERIES to one company, six each to several others, five to another, and a long list of twos and threes that would open your eyes. There's only one reason of course—the ERIE has **made good.** And we're glad it has made good and we wish you a Merry Christmas and a Happy New Year.

And lots more of 'em."

Bill Muldoon.

Would you like to have a good big photo of Bill Muldoon and his Erie Shovel, suitable for hanging on the wall?

We will give you one for Christmas—just write and tell us. "Please send photo of Bill Muldoon."

ONE MACHINE INSTEAD OF THREE

The Erie Shovel is such a fine machine for grading work that a contractor is apt to forget what it can do in addition to straight shovel service.

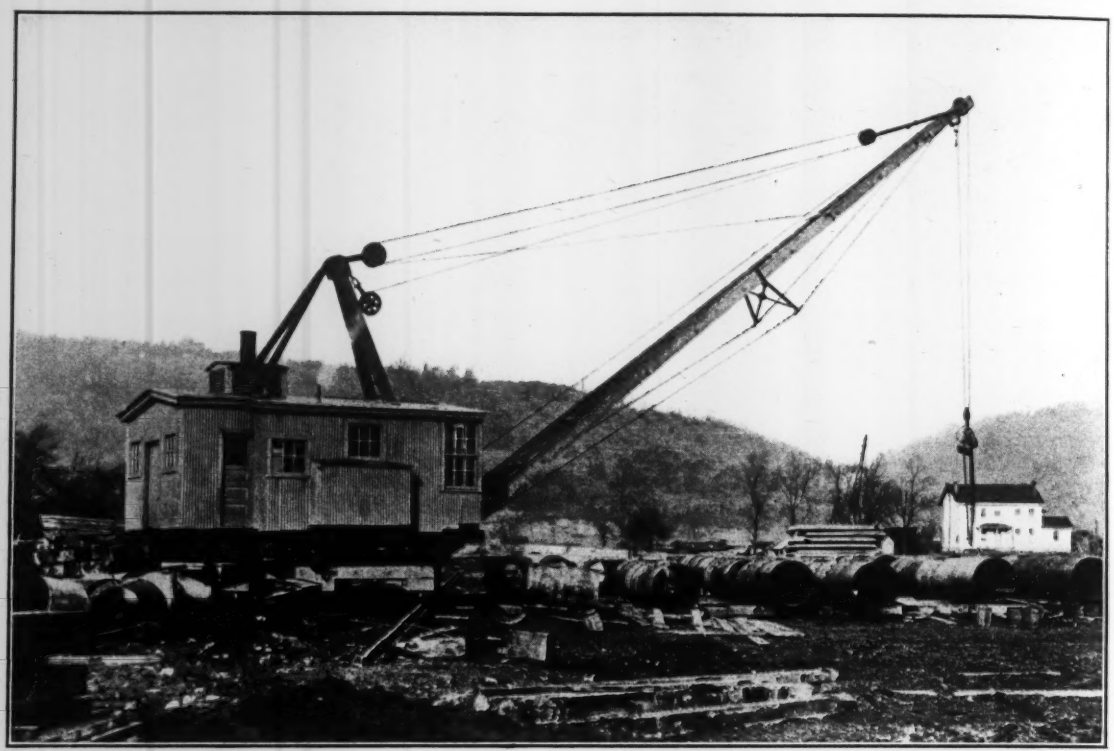
With a 22-ft. or 28-ft. dipper handle, the Erie digs trenches 14 to 18 feet deep, at the rate of two or three hundred cubic yards of material in an ordinary day's work.

With the inexpensive steel boom that we sell for the Erie, it is giving splendid service as a drag-line machine, and as a locomotive crane to operate a clam-shell or orange-peel.

And look close at that top photo. It shows the Erie with her standard dipper stick loading wagons that are standing on a 9-foot bank. With a longer dipper-handle, the Erie loads them on a 14-foot bank.

Ball Engine Co., Erie, Pa.

Find out which is the best revolving shovel on the market



WHIRLER

operating as a general purpose tool in storage yard.

This machine will handle 10 tons at a radius of 73 ft. from center pin; on account of its exceptional capacity; shifting is seldom necessary. Result:

Rapid loading and unloading.

Large storage area can be utilized.

Freight cars can be released promptly.

PROMPT SHIPMENT CAN BE MADE ON STANDARD MACHINES.

DRAVO-DOYLE COMPANY

PITTSBURGH, PA.

PHILADELPHIA **INDIANAPOLIS** **CLEVELAND**

A Shadowless Factory

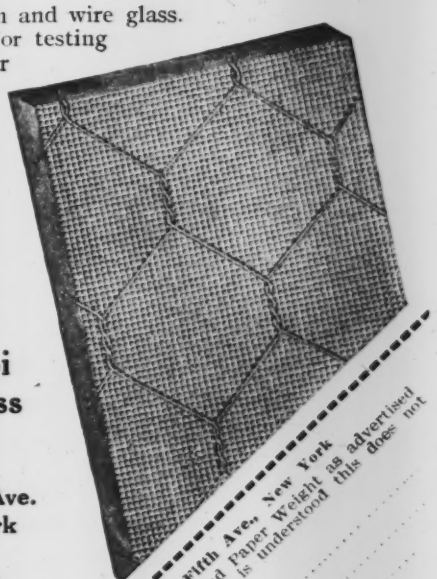
A big Government building 700 x 300 ft. was recently daylighted by over 100,000 sq.ft. of "FACTROLITE." In commenting upon the quality of the daylight *diffusion* in the big structure, engineers remarked—"You cannot see a shadow in any part of the building."

This perfect *diffusion* is a characteristic of "FACTROLITE," which was scientifically determined before we started to manufacture it. Every square inch of "FACTROLITE glass" is covered with 900 minute pyramids, each with a rounded apex and rounded fillets between.

They gather light from a wide angle and deflect it indoors—perfectly diffused. The result is that greater lighting *power* is attained, especially on dull days—and the direct glare of the sun never interferes with work. Freedom from shadows is a third result and an important one, where fine mechanical precision is required.

FACTROLITE

is made in both plain and wire glass. A sample suitable for testing or use as a paper weight will be sent to industrial engineers on request.



The coupon will bring it at once.

Mississippi Wire Glass Co.

218 Fifth Ave.
New York

Chicago
St. Louis

Mississippi Wire Glass Co., 218 Fifth Ave., New York
Gentlemen: Send me a Catalog and Paper Weight as advertised in Engineering News-Record. It is understood this does not obligate me in any way.

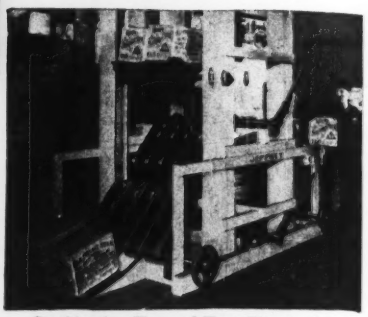
Name .....

Address .....

Multiple Chains with spurs at intervals. A neat substitute for an apron conveyer where merchandise can be dragged upon hardwood floors or steel strips, as shown.

These are pictures of typical successful Jeffrey Conveyers for service in warehouses, office buildings, hotels and stores.

Delivery end of a miscellaneous package conveyer at American Express Co., Boston.



Combination Fingered Tray Elevator handling general merchandise. Delivers four tray loads a minute.

Faster! Faster! Faster!

Each concern—each group of men is called on for more. "Faster! Faster! Faster!" is the cry. "Production must be increased—but you must eke out with the human beings you have—there are none to be spared."

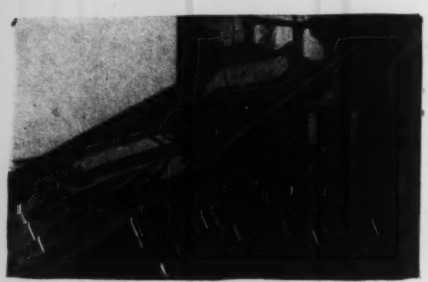
Inclined Steel Apron Conveyer handling Miscellaneous Freight from the Basement of a Chicago Department Store.

Mechanical Aid is the greatest boon to labor. Hardly is there a problem but what can be helped by the installation of suitable

JEFFREY CONVEYERS

We build conveyers for all purposes. Jeffrey equipment is tested equipment. We stand ready to help fill it best to your work. The enveloping Jeffrey Conveying business has made it possible for us to adopt a system of standard units from which almost any conveyer can be built.

Bulletin No. 174-23 has the whole story of Jeffrey Conveyers in pictures. Write for a copy.



Handling U. S. Mail at Chicago

The Jeffrey Manufacturing Co.

923 North Fourth Street, Columbus, Ohio

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Boston
Philadelphia
Cleveland
Scranton
Pittsburgh
Charleston, W Va.
Chicago
St. Louis
Birmingham
Dallas
Milwaukee
Denver
Seattle
Montreal

WIRE ROPE
IS BECOMING A SCARCE ARTICLE

As a matter of fact, soon you will hardly be able to bribe a manufacturer to sell you some.

And yet, you cannot stop hoisting and hauling on that account.

What are you going to do about it?

The obvious thing is to make your present equipment last as long as you can.

Take care of your wire rope. Don't strain it. Don't bruise it. Don't kink it. And, by all means, lubricate it properly. Protect it from the elements, from rust and from corrosion, "The Enemy Within." Protect it with

TEXACO CRATER COMPOUND

This wire rope lubricant is making wire rope last longer on all kinds of jobs.

TEXACO CRATER COMPOUND ubricates the outside of the rope so that it is not exposed to friction from the sheave wheels. It gets into the rope between the inner strands, stays there, prevents wear and chafing and internal failure.

Each and every strand is coated with a film of "CRATER."

TEXACO CRATER COMPOUND is neutral to acid or alkali. It protects the metal from chemical action. In other words, because the contaminated water and moist air cannot touch the steel, there is no rust—no corrosion. The rope lasts longer.

Thus, if you will treat your present ropes regularly with light applications of TEXACO CRATER COMPOUND, you will be repaid over and over again in increased useful life of the rope.

TEXACO CRATER COMPOUND is an investment and an insurance. You should know more about it. Be ready to meet "the wire rope famine." Get out your fountain pen. Fill in the coupon and get "Wire Rope Lubrication" by return mail.

The Texas Company, Dept. N-1,
17 Battery Place, New York City.
Kindly send me your free 48-page book on Wire Rope Lubrication.
I want to see how and why TEXACO CRATER COMPOUND protects wire ropes from wear, rust and corrosion.

Name .....
Firm Name .....
Address .....
City .....
State .....
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THE TEXAS COMPANY

Dept. N-1, 17 Battery Place, New York City

HOUSTON CHICAGO NEW YORK

Offices in Principal Cities

There is a Texaco Lubricant for Every Purpose

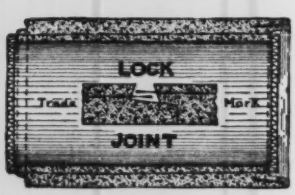
LOCK JOINT PIPE

cuts out Form Work and Guess Work

Photograph shows 90-inch Lock Joint Pipe used on Collins Ave. Contract, Borough of Queens, New York City. Lock Joint Pipe is the ideal pipe for particular work. The joint is made on the interior, doubly reinforced and absolutely uniform, perfectly smooth and positively watertight; it is easily inspected.

Build your next sewer or water line of Lock Joint Pipe and cut out all form work, delays, waiting on railroads and guess work.

Lock Joint Reinforced Pipe for Permanence. Our 100-page book of interesting photographs gives complete details on Lock Joint Pipe. Write today for your copy.



LOCK JOINT PIPE COMPANY
165 Broadway, New York

Canada Lock Joint Pipe Co., Limited, Union Bank Building. Winnipeg, Man., Canada.
Pacific Lock Joint Pipe Co., Tacoma, Seattle, Wash.
Utah Lock Joint Pipe Co., Salt Lake City, Utah.

"MICHIGAN" Combination Steel and Wood PIPE

MICHIGAN PIPE

A Word to Engineers:

Since 1869 we have been furnishing to water-works engineers and industrial engineers a water pipe made to meet **their specifications.**

We have a wealth of service data on the broad field covered by **MICHIGAN PIPE** in water-works and industries. This field is constantly growing broader. Many of the installations may parallel the conditions which you are now considering for pipe line construction.

We will gladly submit our facts to any engineer. We can best present these if we are told the class of construction that you are contemplating—volume of flow required, source of supply, length of the line, gravity flow or direct pumping. If an estimate is required, please submit profile of the line.

Full data will be submitted to you at once.

THE MICHIGAN PIPE COMPANY

Dept. 17, Bay City, Michigan

Chicago, Boston, New York — 900 Lytton Building, 93 Broad Street, 30 E. 42nd Street

Oklahoma City — 711 Majestic Building

Cleveland — 208 American Trust Building

Chattanooga — 319 Hamilton Bank Building

Galveston — 417 Security Building

"Steel for Strength—Wood for Durability"

SAFE—

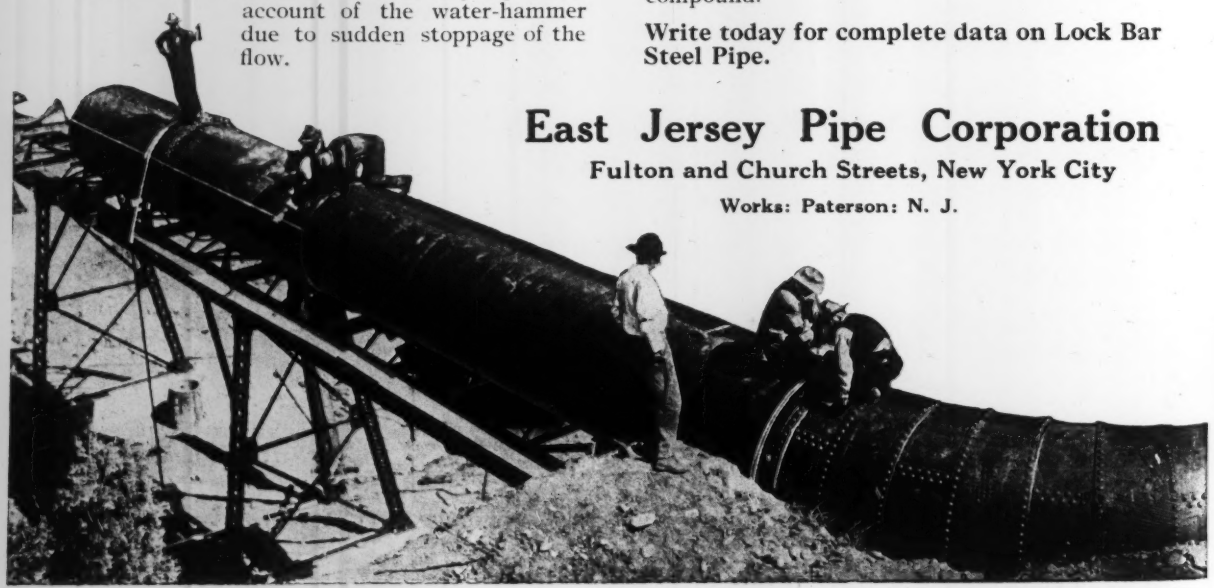
whether buried deep in a trench or high on a trestle

The additional strength with the same thickness of plate of LOCK BAR STEEL PIPE means a greater factor of safety and gives the ability to stand the extra loads of emergencies.

The super-strength of the Lock Bar 100% Joint eliminates the danger of bursting the pipe line when the pressure takes a sudden jump or on account of the water-hammer due to sudden stoppage of the flow.

Other advantages of Lock Bar Steel Pipe are the lower frictional resistance and greater carrying capacity over riveted steel pipe. The standard 30-ft. lengths are just right for shipping and speed up the construction work. All Lock Bar Pipe is protected inside and outside from corrosion by hot application of a high-resistance compound.

Write today for complete data on Lock Bar Steel Pipe.



East Jersey Pipe Corporation

Fulton and Church Streets, New York City

Works: Paterson: N. J.

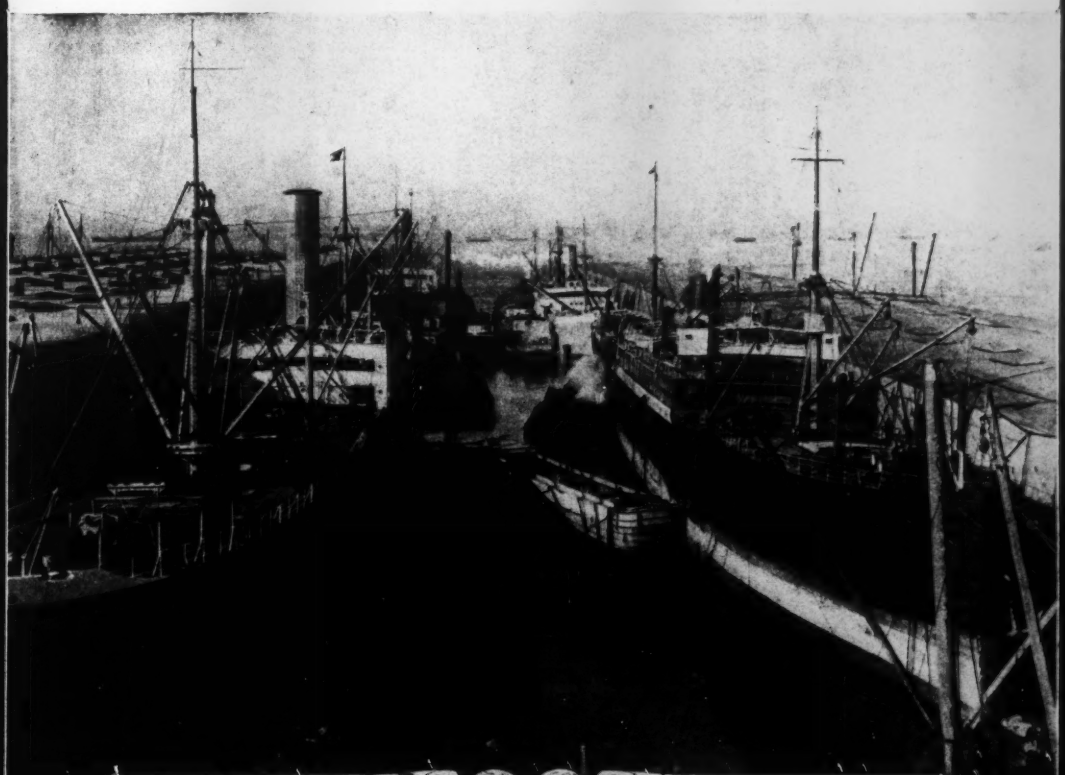
COOPERATIVE SERVICE TO THE EXPORT BUYER

THE ALLIED CONSTRUCTION MACHINERY CORPORATION was formed by the American International Corporation and a group of non-competing American manufacturers of construction machinery.

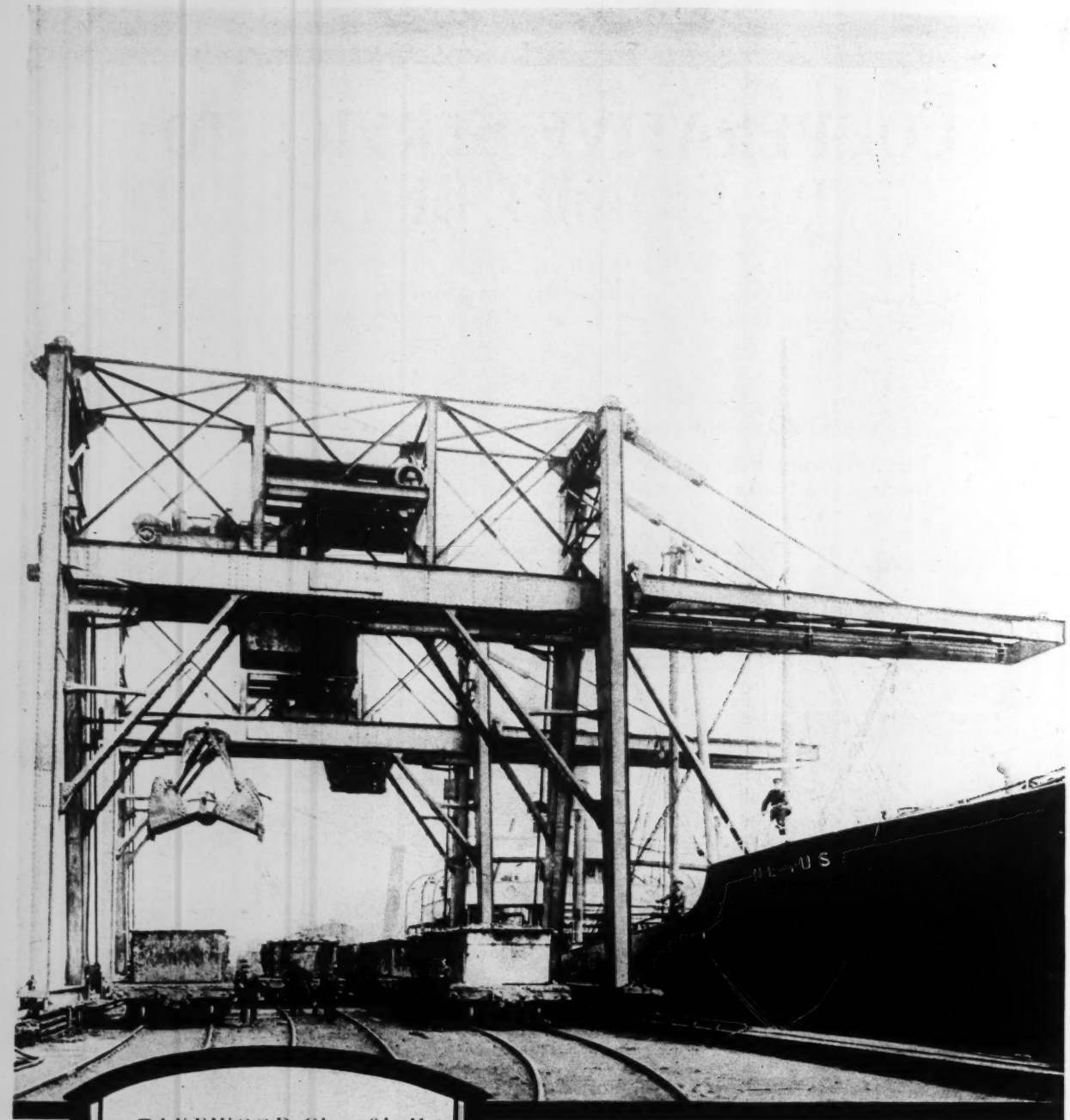
The buyer for export can secure from this single organization a complete line of contractors' plant and equipment—backed by undivided responsibility for shipments and guarantees.

The following manufacturers have joined this cooperative plan of serving the buyer for export to all countries outside of the United States and Canada:

The Lakewood Engineering Company, Cleveland, Ohio
The Thew Automatic Shovel Company, Lorain, Ohio
The Parsons Company, Newton, Iowa
The Hydraulic Pressed Steel Company, Cleveland, Ohio
(Concrete Form Department)
The Austin Manufacturing Company, Chicago, Ill.
The Western Wheeled Scraper Company, Aurora, Illinois
For France, Spain, Italy, Portugal, Belgium and their colonies; the West Indies and China



ALLIED CONSTRUCTION MACHINERY CORPORATION
Under the management and direction of the AMERICAN INTERNATIONAL CORPORATION
120 Broadway New York, U.S.A.



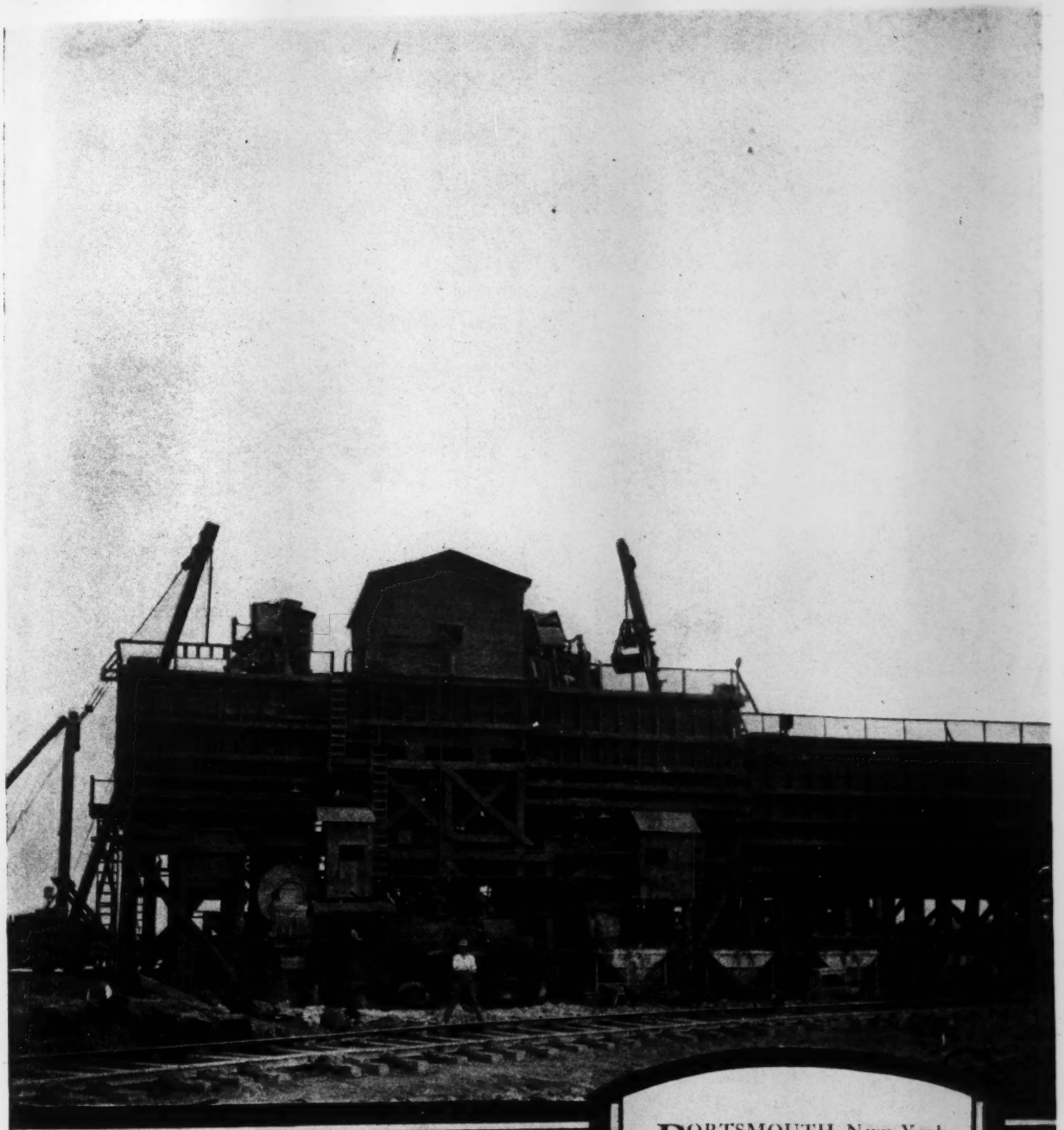
LAKEWOOD Clam Shell Bucket equipped with extra counterweights unloading asphalt from boats for The Barber Asphalt Paving Company, Manver, N. J.

LAKEWOOD
INDUSTRIAL EQUIPMENT

Link up with Lakewood

Lakewood Engineering Co. Cleveland

Sales outside of the United States and Canada handled through the ALLIED CONSTRUCTION MACHINERY CORPORATION, New York, U.S.A.



PORTSMOUTH Navy Yard —Dry Dock No. 4. The Geo. Leary Construction Company, Contractors.

Two No. 56 Lakewood Mixers, One No. 14 Lakewood Mixer, Two Lakewood Clam Shell Buckets, 18-60 ft. Radial gate hopper cars and 3000 feet Type L Concrete Chute.

LAKEWOOD CONSTRUCTION EQUIPMENT

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LAKEWOOD BUILT TO LAST

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LAKEWOOD INDUSTRIAL EQUIPMENT

LAKEWOOD CLAM SHELL BUCKET
1 yard capacity handling crushed stone at docks
TOOLE & SUNDERLIN CO., Bridgeport, Conn.
Contractors

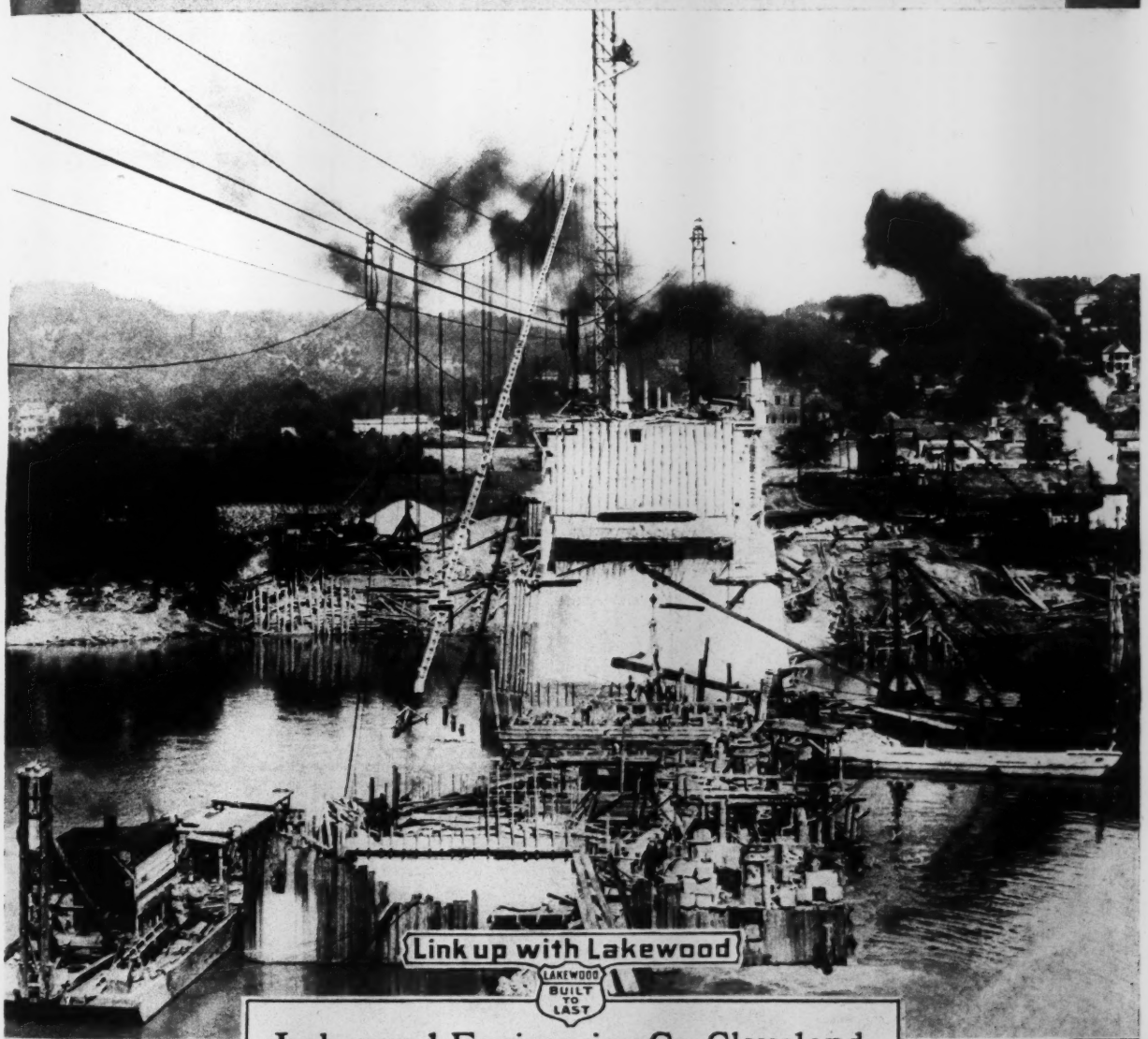
Link up with Lakewood
LAKEWOOD BUILT TO LAST

Lakewood Engineering Co. Cleveland

Sales outside of the United States and Canada handled through the ALLIED CONSTRUCTION MACHINERY CORPORATION, New York, U.S.A.

LAKEWOOD CONTRACTORS EQUIPMENT

MIXING & DISTRIBUTING PLANT
Market St. Bridge, Chattanooga, Tenn.
VANG CONSTRUCTION CO. Cumberland, Md.
Contractors



Lakewood Engineering Co. Cleveland

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RUGGED STRENGTH of the THEW

make it possible to perform the heavy work shown below. Type A-O equipped with 5/8-yard dipper, taking out 300 cubic yards of dirt a day on the site of the New Cleveland & Youngstown Freight Terminal in Chicago. The Walsh Construction Co. of that city, Contractors.

Thews are Everywhere

The Thew Automatic Shovel Co.
Lorain, Ohio
New York Office, 30 Church St.

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One Man does it NOW—

Scarcity of labor is no longer a factor in the progress of underground improvements.

In digging trenches of any size, one man operating either the steam or gasoline-driven "Parsons" is the logical way.

Let us know the type of your work We will be glad to give you complete information about the "Parsons" best fitted to your needs. Ask us about Backfillers.

PARSONS

THE PARSONS COMPANY, 210 Second St., Newton, Ia.

Eastern Office: 18 W. 34th St., New York.

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"Hydraulic"

Sewer and Tunnel Forms

meet the demand for speed. Furnished for any curvature or combination of curves and tangents.

Lack of carpenters and skilled laborers, the soaring lumber prices cannot slacken the speed of the contractor who uses "Hydraulic" standardized forms.

For clean concrete work with only a handy man and three huskies to place your HYDRAULIC PRESSED STEEL FORMS. Write us.

The Hydraulic Pressed Steel Co.

CLEVELAND OHIO

Chicago Office: Fisher Bldg., 342 Dearborn St., New York Office: Singer Bldg., 149 Broadway

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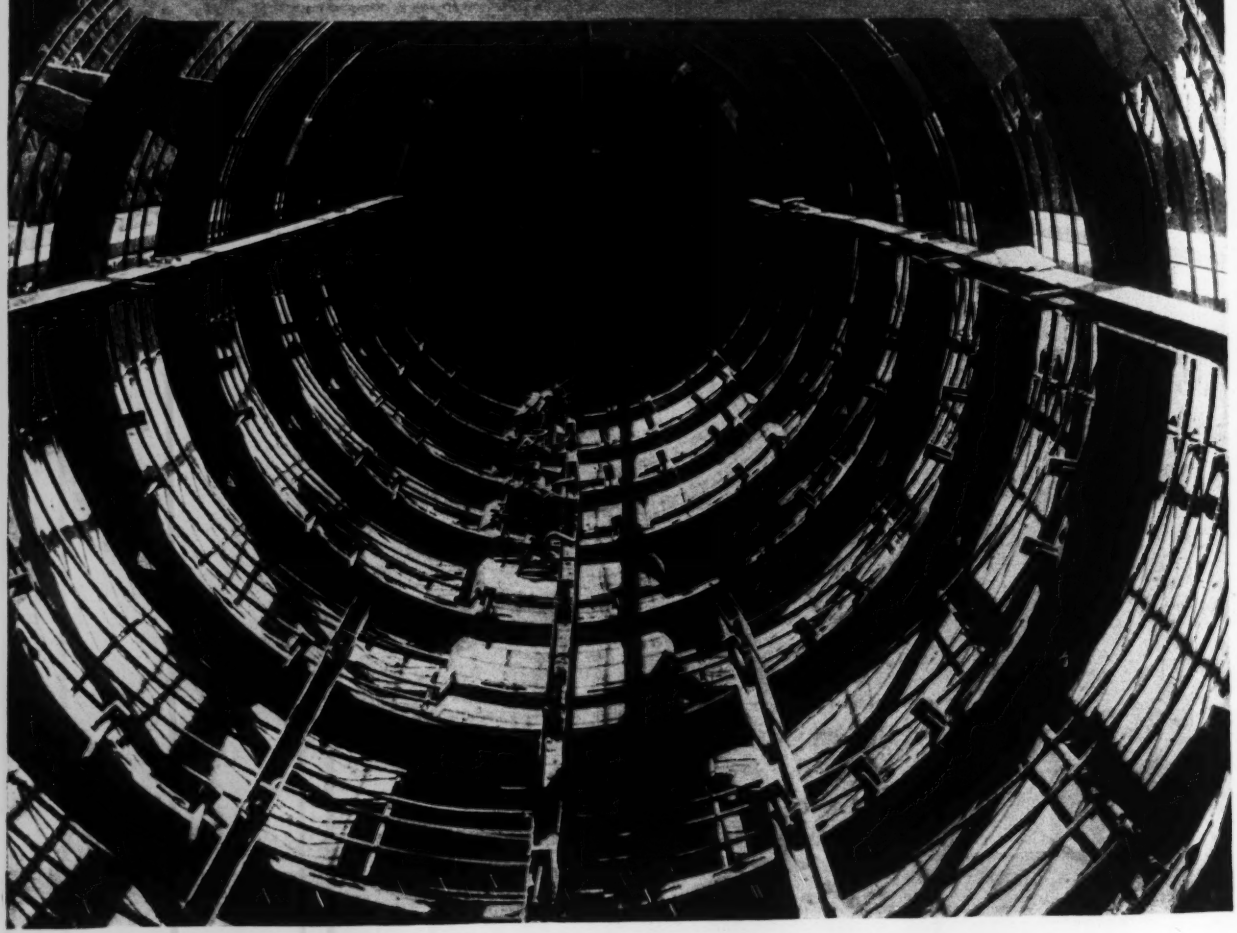

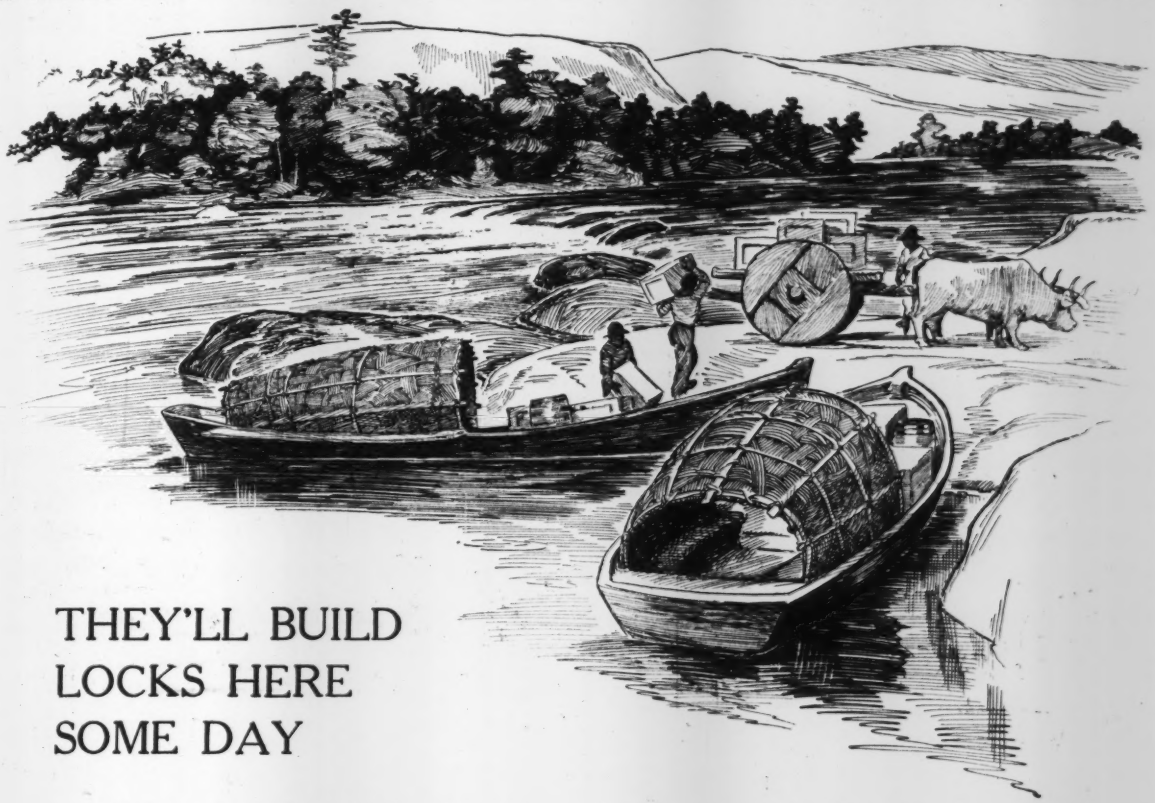

THEY'LL BUILD LOCKS HERE SOME DAY

The rivers of Brazil offer the most remarkable example of a natural transport system, with main trunk lines and feeders, that is present in any country. With one tenth the expenditure that we make on our rivers and harbors they can open up the headwaters of these streams to steam navigation and bring out to the world the immensely valuable products of the great central plateau. And they will do it, too, because this is the land of greatest potentiality. It has every natural resource that we possess and others that we can never have.

American engineers and manufacturers, backed by American dollars and guided by American traders, will play a great part in the development of these resources. But choose carefully your exporting house—it must be in position to supply all that you lack to accomplish success in foreign fields. The combination should want nothing to insure permanent results and uphold American prestige overseas.

The Federal Export Corporation is equipped to sell your services or your machinery, transport the latter, and finance transactions to any amount either by underwriting the bonds or taking the equivalent in products of the land.

We will be glad to explain how Fedex services can be applied to meet requirements.

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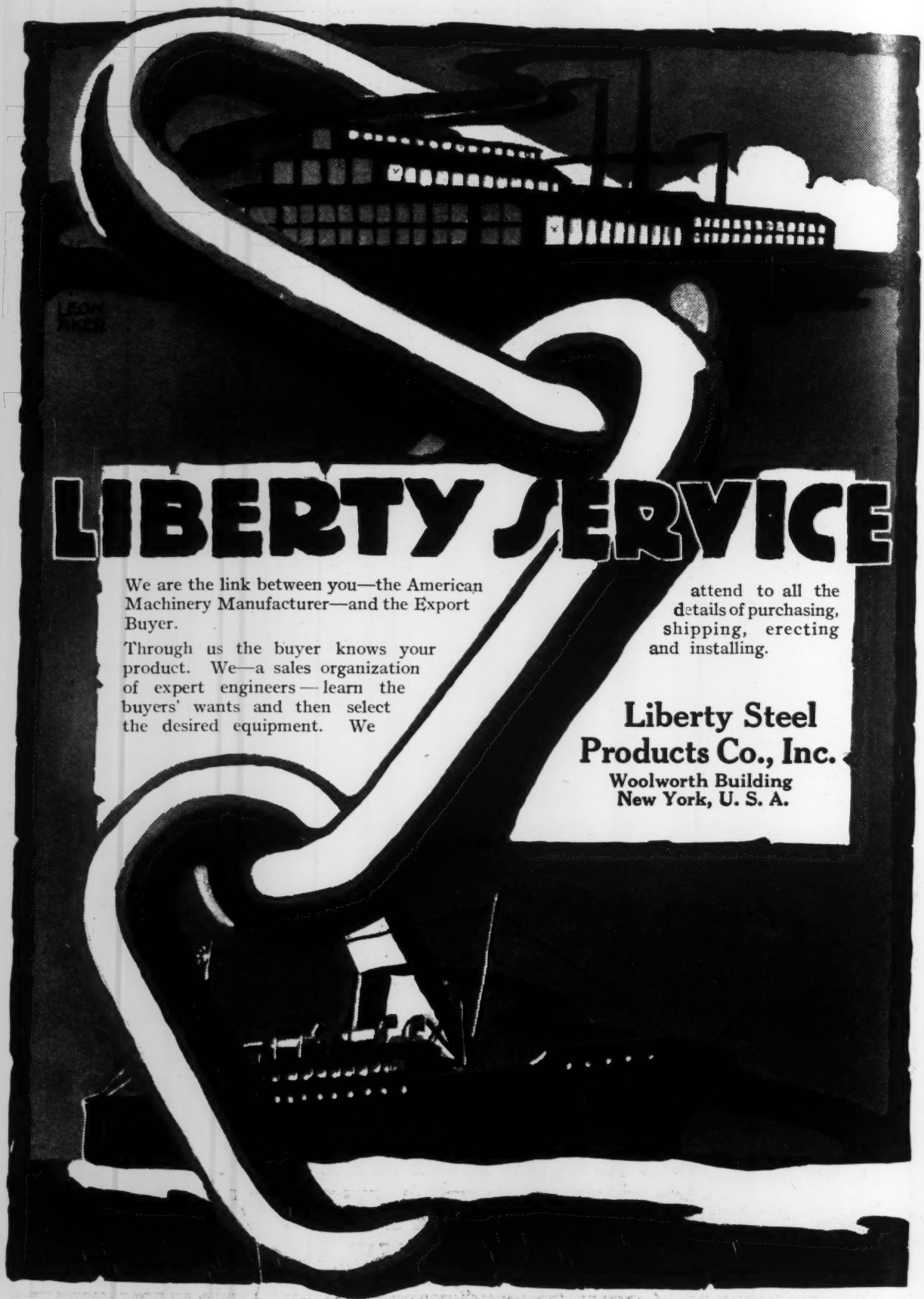

LIBERTY SERVICE
We are the link between you—the American Machinery Manufacturer—and the Export Buyer.
Through us the buyer knows your product. We—a sales organization of expert engineers—learn the buyers' wants and then select the desired equipment. We attend to all the details of purchasing, shipping, erecting and installing.
Liberty Steel Products Co., Inc.
Woolworth Building
New York, U. S. A.

Mack TRUCKS

10,000 MILES

NOT A DOLLAR for REPAIRS

Mr. Hugh G. Williams mines and manufactures roofing slate in Granville, N. Y. His hauling problem presents the difficulties of heavy cargo, rough and hilly roads, a short haul—enough to test the metal of any truck.

A year ago he bought a 3½ ton MACK Truck. After it had traveled 10,000 miles Mr. Williams wrote:

> **"This truck has been in actual service every day except Sundays, a total mileage of about ten thousand miles. The main feature in which this truck excels is the power which it develops. We used this truck in connection with three five-ton trailers and have hauled nine tons of product on the trailer, the trailer itself weighing about 5500 lb., making a total of 11.75 ton, which I consider remarkable for a three ton truck to do. The distance we haul that load is one and one half miles to the railroad and we are drawing from 80 to 100 tons per day. Up to date we have not spent a dollar for any parts outside of tires and driving chains."**

That is MACK performance.

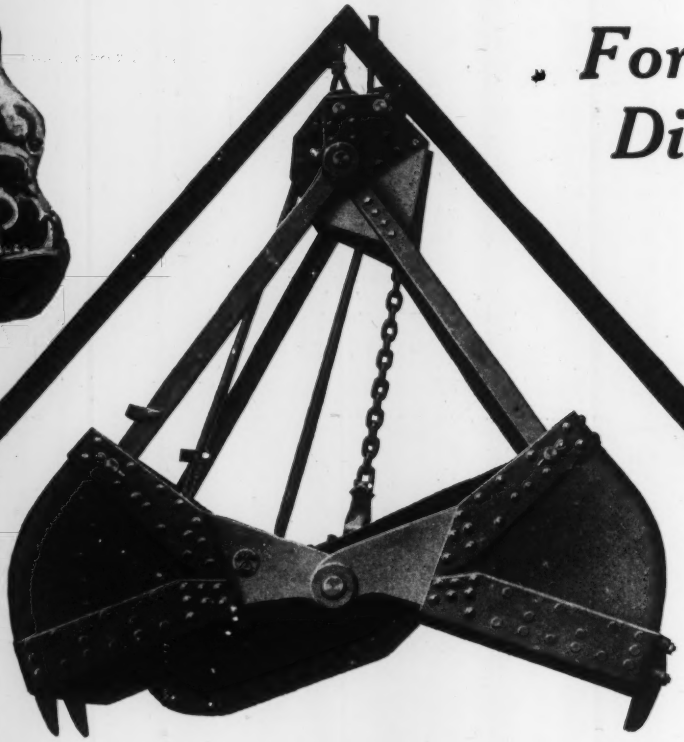
MACK Trucks are made in sizes from 1 to 7½ tons capacity. Special Bodies for individual needs. Write for facts and figures in Bulletin No. 5.

INTERNATIONAL MOTOR COMPANY
NEW YORK

Performance Counts

The "BLAW" BULLDOG

For Tough Digging!



Look at that long lever arm and its reeving (with 5 parts of line) and you see where the **"BLAW" BULLDOG** gets its great closing power.

It is a bucket designed for the toughest kind of digging which it is practical to handle with a clamshell bucket—in excavating trenches or foundations, heavy dredging or re-handling hard material.

Where you strike lighter work you can reeve the **"BLAW" BULLDOG** with 3 parts of line, for faster handling. See its sturdy construction —heavy reinforcing and riveting, rigid headblock that keeps the alignment perfect. Grease plugs are used in place of cups. All the interesting details of its construction are covered by the **"BLAW" BULLDOG** Folder. **Send the coupon for your copy.**

BLAW-KNOX COMPANY, 601 Farmers Bank Bldg., Pittsburgh, Penna.
Please send me a copy of the "BLAW" BULLDOG Folder.
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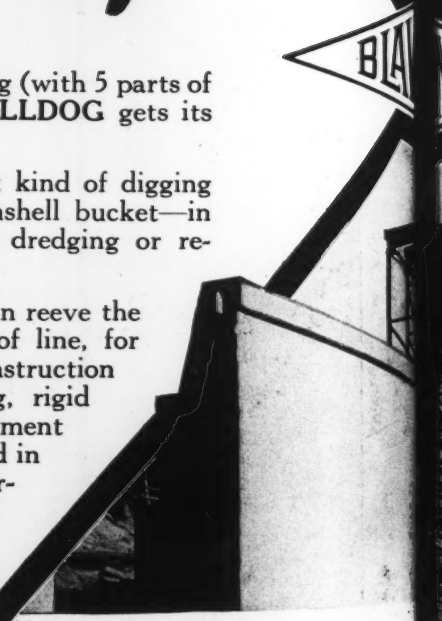


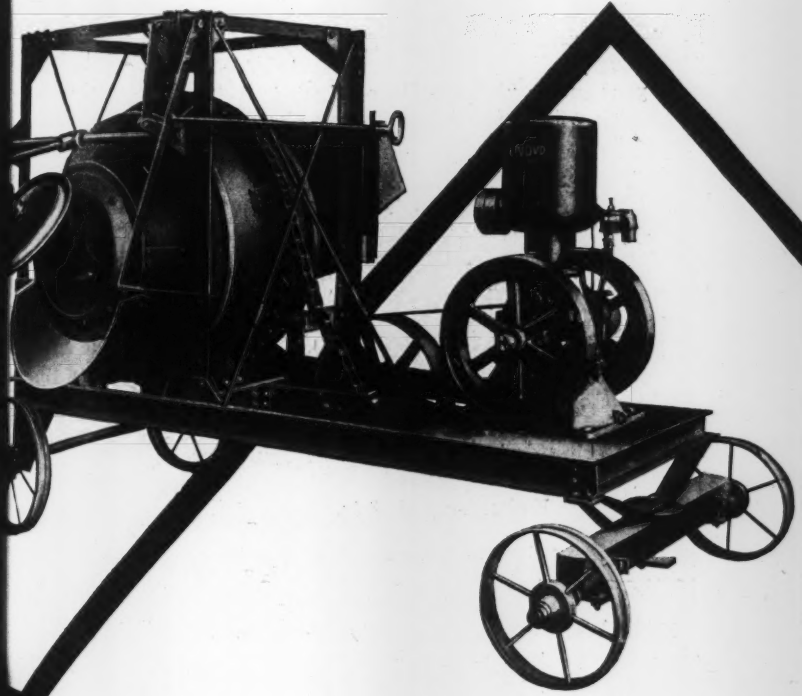
"BLAWFORMS" For

BLAW-KNOX

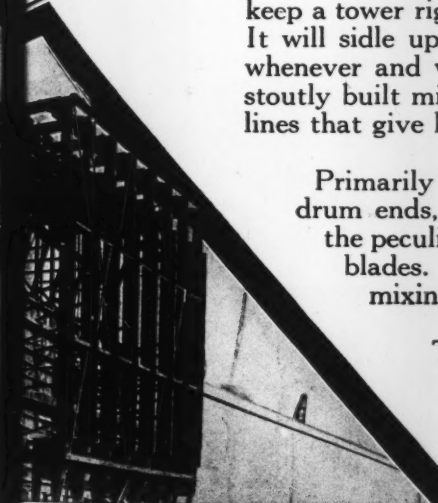
601 Farmers Bank Bldg.,

NEW YORK SAN

The "BLAW-RANSOMIXER"



Handles ALL Your Jobs!



One mixer to cover the widest range of work—is the modern way of contracting. The **"BLAW-RANSOMIXER"** will keep a tower rig busy delivering 10 cu. yd. an hour or better. It will sidle up to a sewer trench and spout concrete down whenever and **wherever** needed. It is a compact, portable, stoutly built mixer of 10 cu. ft. capacity designed along **new** lines that give high capacity per hour.

Primarily this is accomplished by the cone-shaped drum ends, narrow concentrated mixing zone, and the peculiar shape of the **THREE** broad mixing blades. These unite to give an extra-thorough mixing and a rapid, clean discharge.

The complete interesting data is given in the **"BLAW-RANSOMIXER"** Booklet.

Send the coupon for your copy.

BLAW-KNOX COMPANY, 601 Farmers Bank Bldg., Pittsburgh, Penna.
Please send me a copy of the "BLAW-RANSOMIXER" Booklet.
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Concrete Construction

COMPANY

PITTSBURGH, PENNA.

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REX PRODUCTS

Conserve Man-Power

There is a complete line of "REX" Mixers—a size and type for every job. It is not necessary to adapt your plant layout to the "REX" Mixer—there is a "REX" Mixer which will fit perfectly into any plant you may devise.

"REX" TRAVELING WATER SCREENS remove drift and silt from power intakes—saving labor and improving the operation of condensers.

"REX" CONVEYING and ELEVATING EQUIPMENT is doing much work that formerly needed many men. Many applications are shown in our big catalog.

"REX" STEEL CHAIN and "REX" CASTINGS (of grey iron and semi-steel) are at the service of industrial engineering designers as well as manufacturers.

Write for full data.

CHAIN BELT COMPANY

ESTABLISHED 1891

11th Avenue Viaduct, Milwaukee, Wis.

Chain Belt Company, 30 Church St., New York City.
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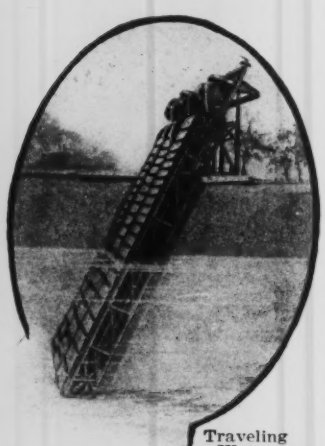
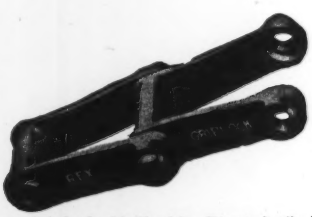
Representatives in Fifty-Seven Cities, and in All Foreign Countries.

Grey Iron and Semi-Steel Castings

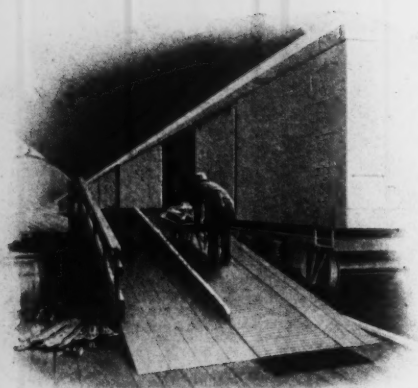


Traveling Water Screens

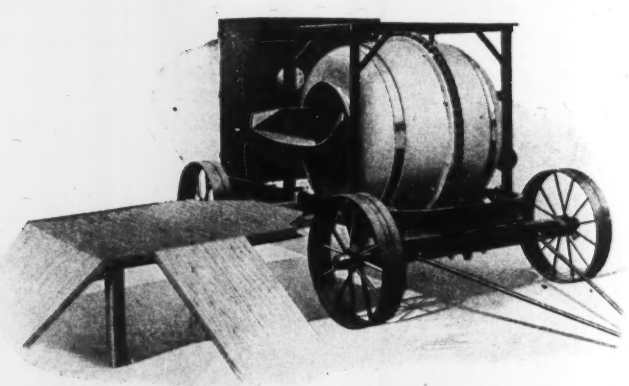
Rex Chabelco Steel Chain



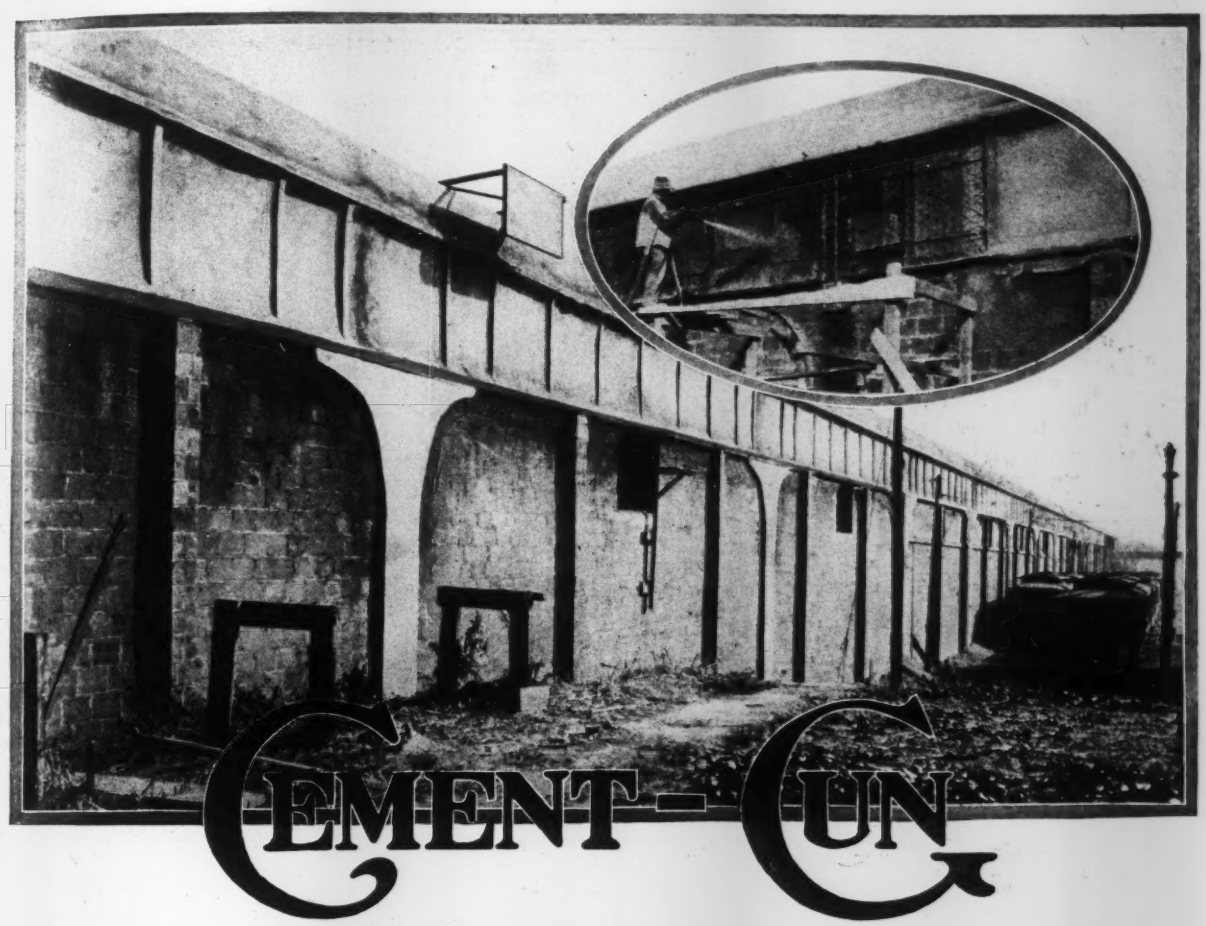
Rex Griplock Malleable Riveted Chain



Escalator for loading castings into Freight Cars



7-S Rex Mixer, complete with Novo Engine and Loading Platform



Protecting Structural Steel

When you cover up structural steel with concrete, applied by pouring into forms—hollow spots are likely to occur. Over fifty girders in the Grand Central Terminal, New York, fireproofed by this method had to be cleaned and **recoated.** The new fireproofing was done by **CEMENT-GUN.**

The illustration shows the method used in applying **"GUNITE"** to structural steel. It is the work of the Universal Cement-Gun Construction Company, Inc., of New York, for the Brooklyn Rapid Transit Co. Reinforcing mesh is attached and the operator sways the nozzle until **"GUNITE"** builds up to the desired depth.

The finished job may be left in its natural "rough-cast" finish or hand floated to a smooth surface.

More essential is the wearing quality and **permanence** of **"GUNITE"** construction. Your **"GUNITE"** clings to the steel with the tenacity of a weld. It is hard, tough, homogeneous and water-tight. It will permanently preserve your steel from corrosion and protect it from flame.

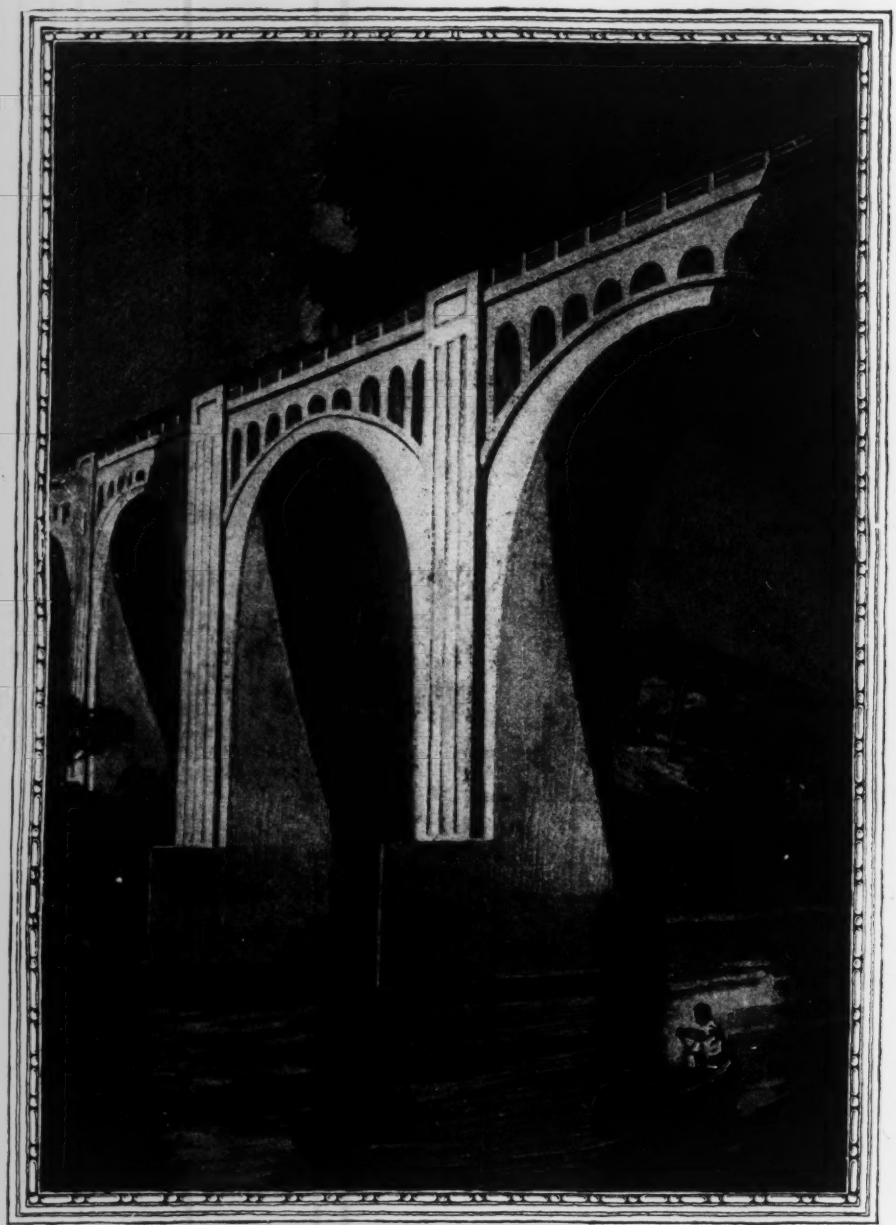
Write for the latest book on Cement-Gun work.

CEMENT-GUN COMPANY, Inc.

ALLENTOWN, PA.

Cement-Gun Company, Inc., 30 Church St., New York City.
Cement-Gun Co., Inc., 1414 Fisher Bdg., Chicago, Ill.
John A. Traylor, Newhouse Building, Salt Lake City, Utah.
Taylor Engineering Co., 538 Central Building, Seattle, Wash.
Taylor Engineering Co., Vancouver, B. C.
J. R. Traylor, 2730 Harrison St., Kansas City, Mo.

The Cement-Gun can be purchased outright from us and used by anyone. It is not a restricted article.



CONCRETE FOR PERMANENCE

D.L.&W.R.R Bridge

(Delaware River, Portland, Pa., just below the Water Gap)

in the construction of which were used more than 300,000 bags of

ALPHA
THE GUARANTEED PORTLAND
CEMENT

TREMENDOUS loads; speedy trains; swift currents; great masses of ice piling through the famous Delaware Water Gap; these are some of the conditions which had to be taken into account by the D. L. & W. R. R. engineers, who planned this extraordinary structure.

Today this magnificent bridge, containing more than 300,000 bags of ALPHA Cement, stands as an everlasting monument to American engineering skill and to the dependability of ALPHA Cement.

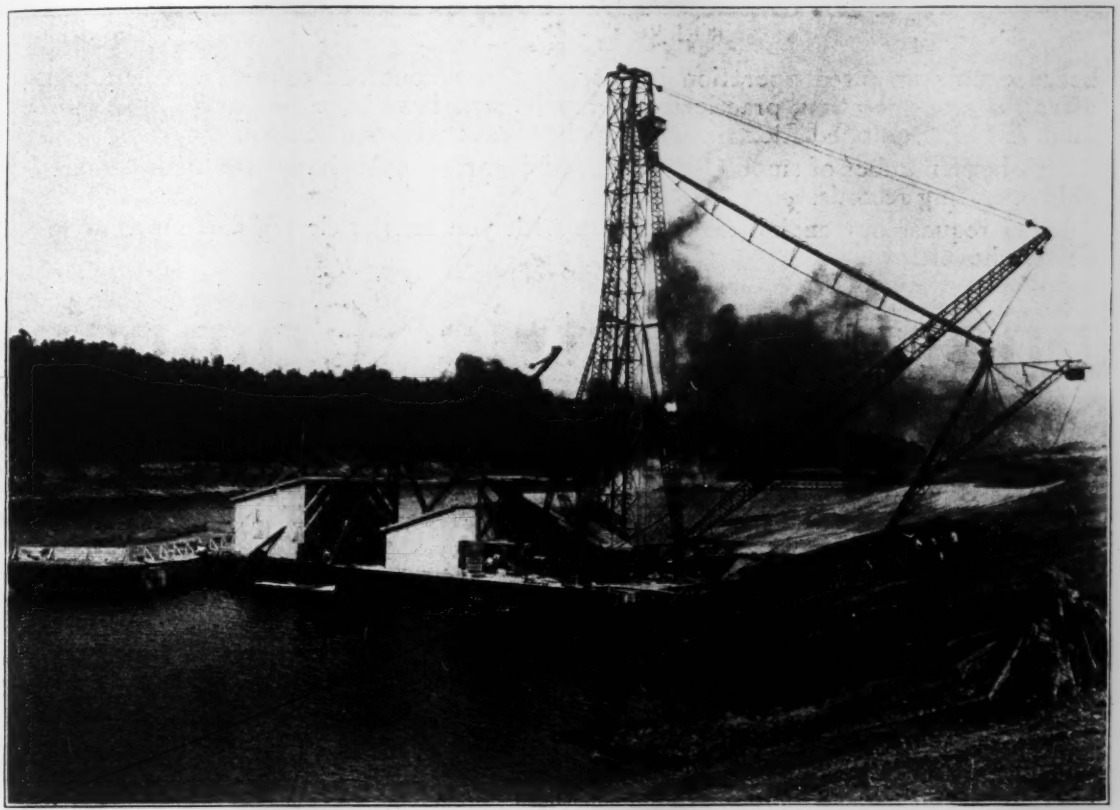
ALPHA is *always* uniform in tensile strength and in its flour-like fineness. Hourly tests, day and night, by ALPHA chemists insure the unvarying high quality of ALPHA Cement—guaranteed fully to meet standard specifications.

"ALPHA Cement—How To Use It," a practical 96-page Handbook on concrete work, sent on request.

ALPHA PORTLAND CEMENT COMPANY GENERAL OFFICES: **Easton, Pa.**

Sales Offices: New York, Philadelphia, Boston, Pittsburgh, Baltimore, Savannah

The Insley Gravity Plant for Concrete Distribution



Floating Gravity Plant placing concrete revetment on banks of Mississippi River. Equipment designed and manufactured by the Insley Mfg. Co., for the United States Engineer Office, Vicksburg, Miss.

Portable Plant

Insley Engineers have specialized upon the design and construction of portable equipment where the mixer, material bins and distributing plant are located upon cars, moveable platforms or barges.

Where conditions are such that portable equipment can be employed, its use is highly recommended. With it minimum placement costs are obtained with a low plant expenditure.

Insley Engineering Service is always glad to study your concrete placement problems with you and to make suggestions covering the equipment that can be used to greatest advantage.

INSLEY MFG. CO. Engineering Manufacturers **Indianapolis**

All the Large Electric Strippers Are G-E Equipped

because uninterrupted operation is possible throughout the coldest weather, and, after years of operation, practically no repair parts have been necessary. The most modern G-E Equipped Electric Strippers now have one-man control.

A large number of small G-E Equipped electric shovels have also made remarkable operating records.

On request our engineers will figure with you on the electrical equipment for power shovels.

General Electric Company

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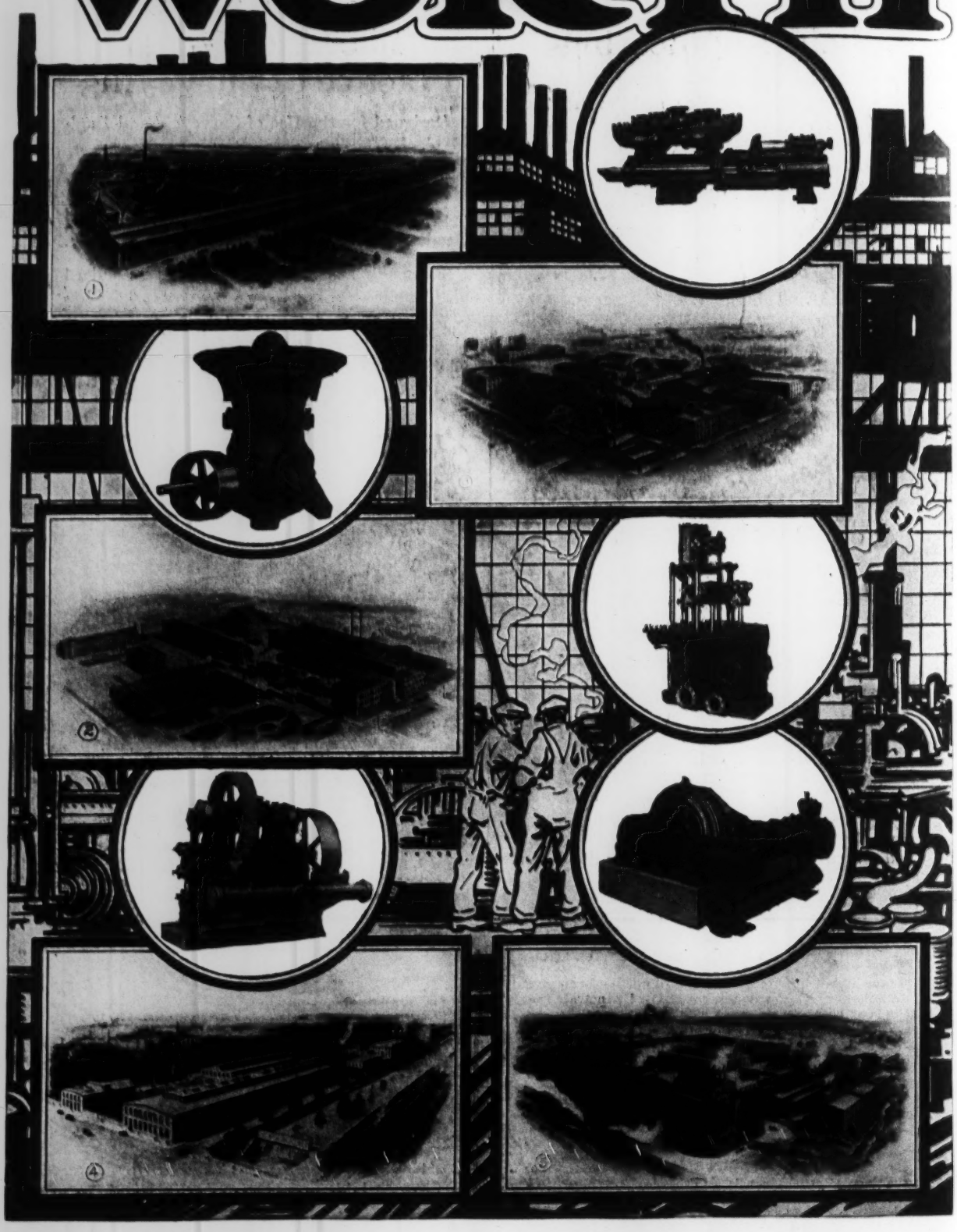

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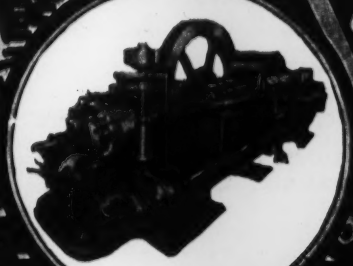

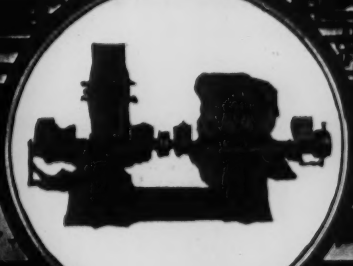

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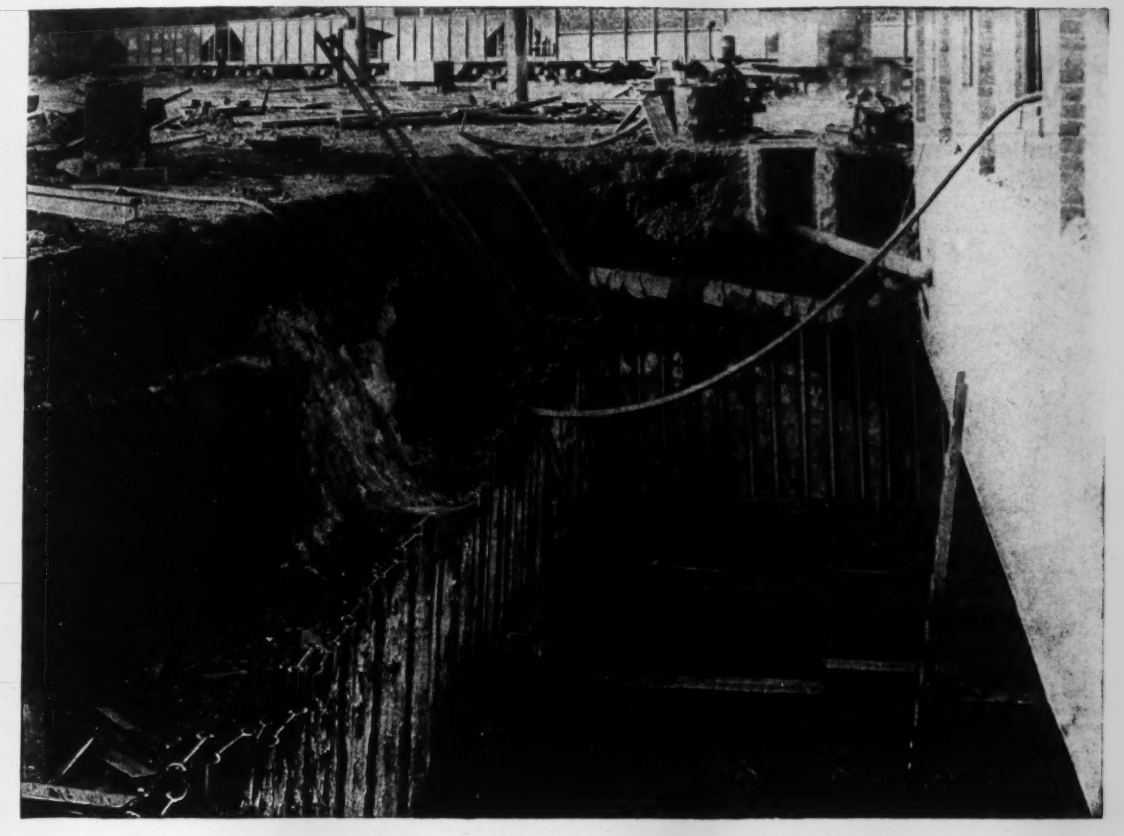

Lackawanna Steel Sheet Piling Cofferdam for Building an Addition to the Screen House Well, The Solvay Process Company, Detroit, Mich.

The excavation here is in a soft place—about eight feet of filled ground and below that, quicksand and soft clay.

The success of a previous installation of Lackawanna Steel Sheet Piling in keeping out water and otherwise facilitating foundation work on the main building, influenced the Superintendent of Construction, Mr. Chas. H. Brodt, to resort to the use of this material again for the extension and for a trench in which a concrete pipe was placed at a depth of 20 feet. Accordingly, the above cofferdam was driven with 24-foot lengths of the Lackawanna Straight-Web Section. A No. 2 Warrington Hammer was used for the driving, and as the sheet piling sections were too short to go the whole depth, they were driven with a follower until their tops were about eight feet below the surface.

This Lackawanna Sheet Piling did its work well, has been pulled for reuse and as we are told, was found very satisfactory.

If you expect to do any foundation or trench work in treacherous or obstinate soil, let our steel sheet piling engineers suggest proper procedure. Their advice is free.

Have you our book, "Lackawanna Steel Sheet Piling?"

Lackawanna Steel Company

General Sales Office and Works: Lackawanna, N. Y.

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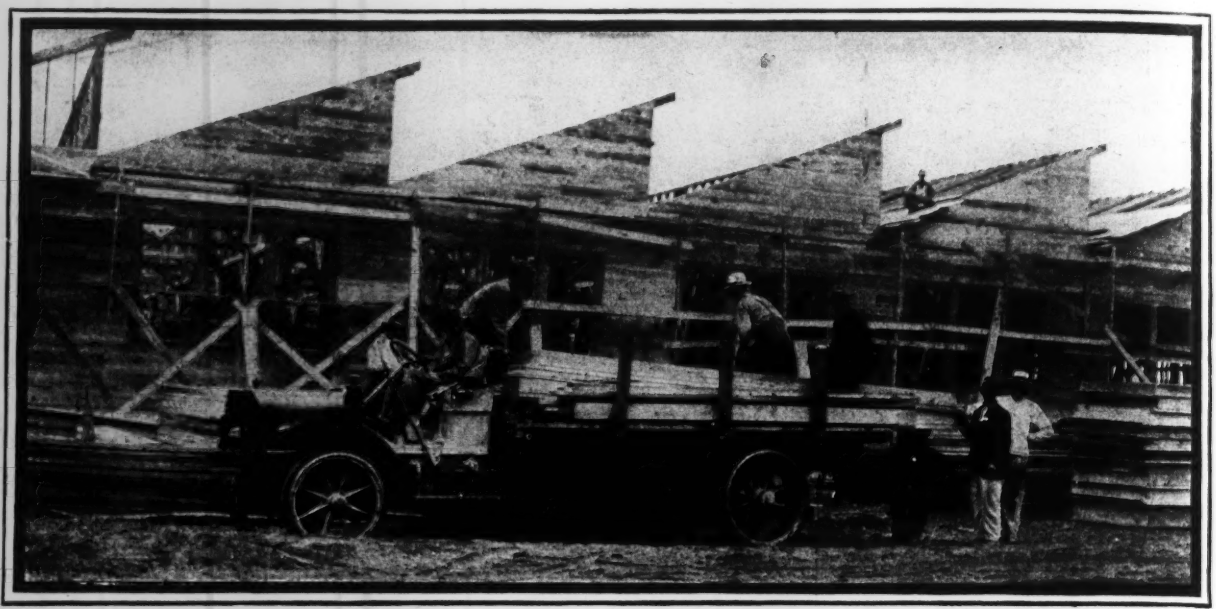

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Mention of a few of the vast quantities of materials hauled by a fleet of over one hundred Whites at Camp Funston and Fort Riley, Kansas, gives some idea of the scope of the work. The following represent freight car loads:

47 cars of nails	120 cars of brick	201 cars of cement
58 cars of sashes and doors	43 cars of boilers	185 cars of water pipe
74 cars of wall board	41 cars of refrigerators	65 cars of gravel
60 cars of electrical supplies	97 cars of roofing materials	23 cars of furnaces and stoves
657 cars of crushed rock	142 cars of plumbing materials	12 cars of office supplies
182 cars of sewer pipe	52 cars of radiators	571 cars of miscellaneous material

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This is but one example of the efficient way in which White Trucks expedite all kinds of transportation work, whether large or small.

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CLEVELAND

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SEARCHLIGHT SECTION

Contracts To Be Let

PROPOSALS

Bids received until January 19, 1918.

Sanitary Sewers

OFFICIAL NOTICE NO. 4

Published by the authority of the Sewerage Commission of Hagerstown, Md.

Sealed proposals for building Main and Lateral Sanitary Sewers in certain Streets, Alleys and Rights of Way, secured and to be secured in the City of Hagerstown, will be received at the Office of the Sewerage Commission in the Police Headquarters Building until 7.30 P.M. January 19th, 1918, at which time and place, during the session of the said Commission, the Bids will be publicly opened and read.

The work to be done embraces the building of approximately 22,000 lineal feet of Sanitary Sewers ranging in size from 8 to 22 inches in diameter with all Manholes, Foundations and Appurtenances, also 19,000 lineal feet of House Connections 6 inches in diameter with all necessary appurtenances.

On and after December 21, 1917, Specifications, Blank Forms of Proposals can be obtained, and detailed Plans examined at the Office of the Sewerage Commission, and full sets of Plans will be sent to any Contractor on the receipt of $10.00, the sum to be returned upon the surrender of the Plans in good condition within 30 days from the date of award.

The Sewerage Commission of the City of Hagerstown reserves the right to reject any and all Bids.

Signed
E. LeROY HEARD, Secretary.
Countersigned
JOHN CARMICHAEL, Chairman.

Bids received until Jan. 9, 1918.

Fire Protection System, etc.

New Orleans, La.

Sealed proposals will be received by the Board of Commissioners of the Port of New Orleans, at their office, Suite 200, New Orleans Court Building, until January 9, 1918, at 11 o'clock A.M., and then publicly opened, for furnishing and installing a complete fire protection and sprinkler system, including motor driven centrifugal underwriters' pumps and complete electrical installation for same, for portions of the Cotton Warehouses and Terminal now under construction for the Board of Commissioners of the Port of New Orleans on the east bank of the Mississippi River between Valence and Soniat Streets.

A deposit of Two Thousand Dollars ($2,000.00) in cash or certified check is required with proposal. Bond with contract Twenty Thousand Dollars ($20,000.00).

On and after December 22, 1917, plans and specifications will be on file at the office of Ford, Bacon & Davis, No. 921 Canal Street, New Orleans, La., by whom full sets will be furnished to prospective bidders on a deposit of Twenty-five Dollars ($25.00), which will be refunded to all bidders who submit proposals and return sets in good condition to the Engineers. To those who do not submit proposals Fifteen Dollars ($15.00) will be refunded upon return of sets as above.

The right is reserved to reject any and all bids and to waive informalities.

(Signed) W. B. THOMPSON,
President.

Official Proposals

Price, $3.60 an inch—Copy can be received until Wednesday, 10 a.m., for issue mailed the next day.

PROPOSALS

Bids received until February 11, 1918.

Arlington Docks

Mobile, Ala.

Sealed bids are asked for the furnishing of materials, the driving of piles and the construction of bulkheads and wharf, in the Bay of Mobile at the Arlington Dock site, in accordance with plans and specifications on file in the office of the city engineer at the City Hall, Mobile, Ala., covering the furnishing and driving of approximately Two hundred and seventy-two thousand five hundred lineal feet of round Long Leaf Yellow Pine piling, varying in length from twenty feet to fifty-five feet; the furnishing and placing of approximately Seven thousand two hundred lineal feet, measured along the top of the bulkhead, double row of four-inch sheet piling; and approximately Eight thousand lineal feet of bulkhead, single row of four-inch sheet piling, —aggregating of sheet piling Two million six hundred and twenty-four thousand feet board measure, and of timbers for framing wharf apron and for completion of the above construction, approximately Nine hundred and eleven thousand nine hundred lineal feet board measure, and of One and one-quarter inch wrought iron anchor rods, in place, aggregating Twenty-one thousand six hundred lineal feet,—bids to be made upon printed form of specifications furnished by the City Engineer, on application, and deposit of Three dollars to cover cost of same and plans.

Sealed bids will be received up to 12 o'clock noon of the 11th day of February, 1918, at which time the same will be opened. All bids must be marked plainly on the outside of the envelope and across the seal, BID ON ARLINGTON DOCKS. Certified check for Five thousand dollars is required to accompany each bid.

The right is reserved to reject any and all bids.

HARRY PILLANS,
Commisisoner of Docks and Wharves.
WRIGHT SMITH,
City Engineer.
S. H. HENDRIX,
City Clerk.

Bids received until Jan. 5, 1918.

Levee Construction

Chamois, Mo.

Sealed proposals will be received up to One O'Clock, Jan. 5th, 1918, at the Office of the Secretary of the Board of Commissioners of the Shawnee Creek Drainage District in Chamois, Missouri, for the construction of 60,000 cubic yards of earth levee.

Plans, specifications, bidders' forms, amount of bidder's bond or check, bond for construction and all information needed for bidders can be had of the Engineer, H. E. Steinmann, Chamois, Mo. Legal advertisement in the News of Osage County, Chamois, Mo.

J. RICHARD GARSTANG,
Secretary.
Chamois, Mo.

PROPOSALS

Bids received until January 4, 1918.

Pipe Line, Etc.

GREATER WINNIPEG WATER DISTRICT

Winnipeg, Man., Can.

Sealed tenders will be received by the Commissioners of the Greater Winnipeg Water District up to noon on Monday, January 4, 1918, for each of the following contracts:

Contract 65: Construction of a Pressure Pipe Line from Red River to McPhillips Street Reservoir. Deposit of $20.00 required.

Contract 69: Manufacture and supply of 48-in. pre-moulded Reinforced-Concrete Pressure Pipe. Deposit of $10.00 required.

Contract 68: Supply of Cast-Iron Pipe and Specials. Deposit of $10.00 required.

Specifications and forms of tender may be obtained on application at the office of the District on and after November 7th, accompanied by a certified cheque for the amount of the deposit, which deposit will be returned on submission of tender or return of documents.

R. D. WAUGH,
Chairman of Commissioners.
501 Tribune Building,
Winnipeg, Man.,
October 30th, 1917.

The date for receiving tenders on the above has been extended by order of the Board to noon on Friday, January 4th, 1918.

Bids received until Feb. 5, 1918.

Water Main

Jersey City, N. J.

Sealed proposals will be received by the Board of Commissioners of Jersey City, Tuesday, February 5, 1918, at 2 p. m., in the Assembly Chamber, City Hall, Jersey City, for the construction of a water main under Hackensack and Passaic Rivers, in accordance with specifications on file in the office of the City Clerk.

Blank forms of bid, showing estimate of quantities and agreements of sureties, must be obtained at the office of the Chief Engineer, City Hall, Jersey City, N. J.

Proposals must be enclosed in sealed envelopes endorsed "Proposal for Water Main," addressed to this Board, and may be either mailed, delivered or handed to the City Clerk, which proposals must be received at the time above mentioned to be presented in open meeting when called for in the order of business relating to sealed proposals.

The bonds required to be furnished on proposals (and a possible subsequent contract) are those of some surety company authorized to do business in the State of New Jersey, or of two responsible real estate owners of Hudson County, or a certified check will be accepted in lieu of bond.

The Board reserves the right to reject any or all proposals if it is considered for the best interests of the city so to do.

By order of the Board of Commissioners of Jersey City.

Dated City Clerk's Office,
Jersey City, December 11, 1917.

FRANK A. DOLAN,
City Clerk.

SEARCHLIGHT SECTION

Contracts To Be Let

PROPOSALS

Bids received until Jan. 8, 1918.

Barge Canal Terminals

STATE OF NEW YORK
OFFICE OF SUPERINTENDENT OF PUBLIC WORKS

December 7th, 1917.
Albany, N. Y.

Sealed proposals will be received by the undersigned at his office in the Capitol at Albany, N. Y., until twelve o'clock noon of Tuesday, January 8th, 1918, at which place and hour they will be publicly opened and read, for the construction of Barge Canal terminals pursuant to the provisions of Chapter 746 of the Laws of 1911, and of the acts amendatory thereof, as follows:

TERMINAL CONTRACT NO. 207

For constructing a Barge Canal terminal freight shed and a headhouse, exclusive of plumbing and heating, on pier 6, East River, New York, N. Y.

Contract plans sheets 1 to 20.

Plans may be seen and detailed specifications, engineer's estimate of quantities, proposal blanks, forms of contract and bonds required and other information for proposers may be had at the office of the Superintendent of Public Works at Albany, N. Y., at the office of the Assistant Superintendent of Public Works for the Middle Division at Syracuse, N. Y., at the office of the Assistant Superintendent of Public Works for the Western Division at Rochester, N. Y., and at the canal office, Spaulding's Exchange, Buffalo, N. Y.

Copies of detailed plans or drawings may be obtained from the State Engineer and Surveyor at Albany, N. Y., upon payment to him of the cost of producing them.

Monthly estimates will be paid of ninety per centum (90 per cent.) of the work done at the contract price. Every proposal for said work must be accompanied by a money deposit in the form of a draft or certified check upon some good banking institution in the city of Albany or New York, issued by a national or state bank or trust company in good credit within the state and payable at sight to the Superintendent of Public Works for five per centum (5 per cent.) of the amount of the proposal.

The person whose proposal shall be accepted will be required to exectue a contract and furnish bonds within ten days from the date of notice of award delivered to him or them in person or mailed to the address given in the proposal.

Upon execution of the contract and approval of bonds, the certified check or draft will be returned to the proposer unless the same shall have been presented for collection prior to such time, in which case the amount of the deposit will be refunded by the Superintendent of Public Works.

The deposits of bidders other than the one to whom the award of contract shall be made will be returned immediately after the award has been made.

The bond required for the faithful performance of each contract shall be in such sum as shall be fixed by the Superintendent of Public Works, which sum shall not be less than twenty per centum (20 per cent.) of the estimated cost of the work according to the contract price, and an additional bond, known as the labor bond, in the sum of ten per centum (10 per cent.) of the amount of the estimated cost of the work according to the contract price, will be required as security that the contractor will pay in full at least once in each month all laborers employed by him upon the work specified to be done in the contract.

In the event that more than one surety company is offered as surety on said bonds, co-insurance only will be accepted.

Each proposal must be addressed to the Superintendent of Public Works, Albany, N. Y., and must be endorsed on the envelope with the name of the construction for which the proposal is made.

Award, if made, will be made to the person or persons whose proposal shall be lowest in cost to the State for doing the work, and which shall comply with all provisions required to render it formal. Before any award shall be made the lowest bidder will be required to satisfy the Superintendent of Public Works of his ability to provide suitable equipment and materials for the proper performance of the work.

The right is reserved to reject all proposals and readvertise and award the contract in the regular manner if in the judgment of the undersigned the interests of the State will be enhanced thereby.

W. W. WOTHERSPOON,
Superintendent of Public Works.

Bids received until Jan. 3, 1918

Heating, Plumbing, etc.

Thiells, N. Y.

Sealed proposals for Construction, heating, plumbing and electric work for Attendants' Home and Service Building, at Letchworth Building, at Letchworth Village, Thiells, N. Y., will be received by Mr. Frank A. Vanderlip, President of the Board of Managers of Letchworth Village, No. 7 Wall Street, New York City, until 12 o'clock noon on Thursday, January 3rd, 1918, when they will be publicly opened and read. Proposals shall be enclosed in an envelope furnished by the State Architect, sealed and addressed, and shall be accompanied by a certified check in the sum of five per cent. (5%) of the amount of proposal. The contractors to whom the awards are made will be required to furnish surety company bond in the sum of fifty per cent. (50%) of the amount of contract within thirty (30) days after official notice of award of contract and in accordance with the terms of Specifications Nos. 2828, 2829, 2833, 2834, 2837, 2838, 2841, 2842 and addenda dated November 21st and December 5th, 1917. The right is reserved to reject any or all bids. Drawings and specifications may be consulted at Letchworth Village, Thiells, N. Y., at the office of the Board of Managers, No. 7 Wall St., New York City, and at the New York Office of the Department of Architecture, Room 1224 Woolworth Building, and at the Department of Architecture, Capitol, Albany, N. Y. Drawings and specifications and blank forms of proposal may be obtained at the Department of Architecture, Capitol, Albany, N. Y., upon reasonable notice to and in the discretion of the State Architect, Lewis F. Pilcher, Capitol, Albany, N. Y.

Dated: December 13th, 1917.

Bids received until Jan. 10, 1918.

Wingdale Prison Improvements

Wingdale, N. Y.

Sealed proposals for Construction, Heating, Sanitary and Electric Work for Cell House, Interlocking Building, Mess Hall and Central Heating and Lighting Plant, and Underground Piping and Conduit Work, Underground Sewer and Water Connections and Underground Electric Service Connections, at Wingdale Prison, Wingdale, N. Y., will be received by the Commission on New Prisons, Room 618, Hall of Records Building, Centre and Chambers Sts., New York City, until 2:30 o'clock p.m., on Thursday, January 10, 1918, when they will be publicly opened and read. Proposals shall be inclosed in an envelope furnished by the State Architect, sealed and addressed, and shall be accompanied by a certified check in the sum of five per cent (5%) of the amount of proposal. The contractors to whom the awards are made will be required to furnish surety company bond in the sum of fifty per cent. (50%) of the amount of contract within thirty (30) days after official notice of award of contract and in accordance with the terms of Specifications Nos. 2812, 2813, 2814, 2815, 2879, 2882, 2869, 2885, 2872, 2880, 2883, 2870, 2886, 2873, 2881, 2884, 2871, 2887 and 2874. The right is reserved to reject any or all bids. Drawings and specifications may be consulted at the office of the Commissioner on New Prisons, Room 618, Hall of Records, New York City, at the New York Office of the Department of Architecture, Room 1224, Woolworth Building, and at the Department of Architecture, Capitol, Albany, N. Y. Drawings and specifications and blank forms of proposal may be obtained at the Department of Architecture, Capitol, Albany, N. Y., upon the deposit of a certified check in the sum of $10.00 made payable to the State of New York for each set of plans and specifications, which check will be returned if plans and specifications are sent back in good condition to the State Architect, Lewis F. Pilcher, Capitol, Albany, N. Y.

Dated: December 10, 1917.

Bids received until Jan. 21, 1918.

Asphaltic Cement

Lansing, Michigan.

The City of Lansing, Michigan, will receive sealed proposals for asphaltic cement for the year 1918, in accordance with plans and specifications on file in the office of the City Engineer of said city, up to 4 o'clock p. m., Monday, January 21, 1918, at the office of the City Clerk of said city.

Each bidder must have in the hands of the City Engineer of said city a sample for test on or before January 8, 1918.

Each proposal must be accompanied with a certified check in the sum of $500.00.

Right is reserved to reject any or all bids.

JUDSON A. PARSONS, City Clerk.
Lansing, Mich., Dec. 18, 1917.

PROPOSALS FOR JETTY WORK, U. S. Engineer Office, Masonic Temple, Jacksonville, Fla.—Sealed proposals for furnishing about 62,000 tons stone, and raising the outer portions of jetties at entrance to St. Johns River, Fla., will be received at this office until 12 o'clock noon, Jan. 5, 1918, and then opened. Information on application.

SEARCHLIGHT SECTION

Contracts To Be Let

PROPOSALS

Bids received until Jan. 15, 1918.

Earthen Dams

Anaconda, Mont.

Sealed bids will be received by the Anaconda Copper Mining Company, Anaconda, Montana, until 2 P.M., January 15, 1918, for the construction of earthen dams for the retention of waste products of the Anaconda Copper Mining Company smelters at Anaconda, Mont. Total volume of earthen dams, 907,210 cu.yd. Other details of the work, including specifications and topographic map of the location can be obtained at the New York and Chicago offices of the Anaconda Copper Mining Co.

We Master Details for You by Accurately Listing All Items of Work and Materials

Conceive the advantage of being able to hand the contractor accurate detailed quantity lists on the work to be done and the materials entering into the building you propose to erect. We offer you our service in analysing to a nicety all your quantities through

The American Quantity System

It means protection to the contractor.

It offers opportunity to figure more jobs.

It speeds up estimating.

It gives a better basis for taking sub-bids.

It gives opportunity to buy material to better advantage.

It avoids loss of time figuring jobs that the other fellow wins because of omissions.

It gives you a bonded "take-off gang."

Write us for details.

THE QUANTITY SURVEY CO.
Incorporated

23 West 45th Street
New York City

PROPOSALS

Bids received until January 24, 1918.

Road Improvements

Jonesboro, Ark.

Sealed bids for the improvement of certain roads and streets in Road Improvement District No. 4, Craighead County, Arkansas, will be received by the Board of Commissioners of the Jonesboro-Nettleton Road Improvement District at the office of the Secretary, V. C. Kays, Jonesboro, Arkansas, until 2 P.M., January 24, 1918, at which time and place they will be publicly opened and read.

The work proposed consists of the grading and paving of approximately five and one-half miles of roads, together with the construction of the necessary culverts.

The principal quantities are approximately as follows:

Grading, average haul not exceeding 500 feet—19,800 cu.yd.

Paving, asphaltic concrete—58,100 sq.yd.

Vitrified pipe culverts, 18 in. in diameter, 160 lin.ft.

Vitrified pipe culverts, 24 in. in diameter—160 lin.ft.

Concrete in culverts and head walls—300 cu.yd.

Plans and specifications may be examined at the office of the Secretary of the District, Jonesboro, Arkansas, or at the Jonesboro office of the Engineers, Klyce & Kackley, Berger Building, or a copy may be obtained from the Engineers upon receipt of a deposit of $15, of which amount ten dollars ($10) will be refunded when the plans and specifications are returned in good order. If additional information is required, address the Engineers.

The right is reserved to reject any or all proposals and to waive informalities. The contractor will be paid cash on monthly estimates amounting to 80 per cent. of the work done.

All proposals or bids must be accompanied by a certified check drawn on a responsible bank or trust company and made payable to J. E. Parr, Treasurer, for a sum not less than 5 per cent. of the aggregate of the proposal. The successful bidder will be required to furnish a performance bond in the sum of 50 per cent. of the contract price.

V. C. KAYS,
Secretary Board of Commissioners.

KLYCE & KACKLEY,
Civil and Consulting Engineers,
505 Fourth and First National Bank Building, Nashville, Tenn.

Bids received until January 8, 1918.

Pier Construction

DEPARTMENT OF WHARVES, DOCKS AND FERRIES, 550 BOURSE BUILDING, PHILADELPHIA

December 15, 1917.

Sealed proposals, endorsed "Bids for Incidental Work required for the completion of Pier No. 78 South, Moyamensing Group, in the Delaware River, at the foot of McKean Street," will be received until 12 o'clock noon, Tuesday, January 8, 1918, in the office of the Director of the Department of Wharves, Docks and Ferries, 550 Bourse Building, Philadelphia, and then publicly opened.

Plans, specifications and blank forms upon which bids must be made can be obtained at the office above mentioned upon the deposit of a certified check in the amount of $25.00 to cover cost of blue prints, etc., which check will be returned upon the receipt of the plans and specifications in good condition and unmarked. The successful bidder will be furnished with all necessary blue prints free of charge.

Proof must be furnished the Department by the contractor that he has accepted the provisions of the Workingmen's Compensation Act of June 18, 1917, relative to workingmen's compensation insurance, and insured his liability thereunder or secured exemption therefrom.

No bid will be considered unless accompanied by a certificate from the City Solicitor of the City of Philadelphia, to the effect that the provisions of an ordinance approved May 25, 1860, requiring proposal bonds on all bids exceeding in amount $500 have been complied with.

The Director reserves to himself the right to reject any or all bids as he may deem best for the interest of the City of Philadelphia.

GEORGE S. WEBSTER,
Director.

Roads and Bridges

Santo Domingo, W. I.

The United States Military Government in Santo Domingo, Dominican Republic, contemplates spending the sum of about $1,500,000.00 for the construction of improved roads and bridges, within the next two years.

Proposals will probably be invited on about one-half of this work, within the next sixty (60) days, and official detail announcement of the work will be made at that time.

Any Contractors or Engineers desiring detailed information with regard to this work, should address A. J. Collett, Director General of Public Works, Santo Domingo City, Dominican Republic, West Indies.

Bids received until January 4, 1918.

Paving

Richmond, Va.

Sealed proposals will be received at this office until 12 o'clock noon, January 4, 1918, for the relaying, repairing and furnishing such new material as may be required to restore the City's part of the defective Asphalt Block Paving on Broad Street, between 3rd and 10th Streets.

Forms of proposals can be obtained on application.

A certified check, payable to the City Treasurer, for $1,000, must accompany each bid as a guaranty of execution of contract. The Administrative Board reserves the right to reject any and all bids or to let the work in part or as a whole.

CHAS. E. BOLLING,
City Engineer.

U. S. ENGINEER OFFICE, Cincinnati, Ohio.—Sealed proposals for furnishing, delivering and erecting gates for Locks Nos. 33 and 39, Ohio River, will be received here until 2 p.m., January 18, 1918, and then opened. Information on application.

SEARCHLIGHT SECTION

Miscellaneous

PROPOSALS

Bids received until January 22, 1918.

Enlargement of Filter Plant

Fort Worth, Tex.

Sealed proposals will be received by the Mayor and Board of Commissioners of the City of Fort Worth, Texas, until 9:00 o'clock Tuesday, January 22nd, 1918, for the construction of additional filters at the water filtration plant in Fort Worth, Texas.

The work consists mainly of the construction of four additional rapid sand filters, each having a capacity of 1,250,000 gallons per 24 hours; of the piping and control equipment connected thereto; of two wash water waste detention tanks; of the extension of the present filter gallery building; and of the laying of certain new pipes, sewers, conduits, etc.

Plans and specifications can be obtained from F. J. Von Zuben, City Engineer, City Hall, Fort Worth, Texas. A charge of $25.00 will be made for each set of plans and specifications, which amount will be refunded upon the return of the plans and specifications in good condition.

Plans and specifications can be seen at the office of John H. Gregory, Consulting and Designing Engineer, 170 Broadway, New York City.

Each bid must be accompanied by a certified check on a Fort Worth bank for $5000, and the successful bidder will be required to furnish a surety company bond of $20,000.

J. C. LORD,
Commissioner of Water Works.

Bids received until Jan. 4, 1918.

Viaduct and Retaining Walls

OFFICE OF CITY ENGINEER
Richmond, Virginia.

Sealed proposals will be received at this office until 12 o'clock noon, January 4, 1918, for the construction of a reinforced concrete viaduct and retaining walls, in line at Chamberlayne Avenue Parkway, over Bacon Quarter Branch valley.

Apply to Carneal & Johnston, Engineers and Architects, Richmond, Va., for plans, specifications and forms of proposals.

Also proposals will be received for the following work on Chamberlayne Avenue Parkway and on Chamberlayne Avenue:

Grading.
Granolithic Curbs and Gutters.
Graveling, and an alternate proposal for Bituminous Paving.

Plans, specifications and forms of proposals can be obtained upon application to the City Engineer.

A certified check of $1,000.00 payable to the City Treasurer must accompany each bid as a guaranty of execution of contract. The Administrative Board reserves the right to award contracts in whole or in part, or to reject any and all bids.

CHAS. E. BOLLING,
City Engineer.

U. S. ENGINEER OFFICE, Old Federal Building, Wilmington, Del.—Sealed proposals for dredging Inland Waterway between Rehoboth Bay and Delaware Bay, Del., will be received here until 11 A. M., Jan. 10, 1918, and then opened. Further information on application.

PROPOSALS

Bids received until January 11, 1918.

Drainage Construction

Philadelphia, Miss.

Sealed proposals addressed to A. D. Sharp, Chairman of Drainage Commission of Kentawka Drainage District in Neshoba County, Miss., for the construction of certain canals as shown on attached plan. Three contracts will be let separately and distinct and proposals will be received separately for Division "A," Division "B," and Division "C" according to Engineer's estimates which is made a part of this notice.

The Contractor will submit a proposal on each of the three divisions as outlined above, and the consideration to be paid cash, or bonds paid to the Contractor by the District. The right is reserved by the Commissioners to issue bonds monthly on Engineer's estimate; and should this be done the bonds will be matured yearly from date of issuance, bearing six per cent. interest payable annually and in serial number for 24 years.

Plans, profiles and specifications are on file at the office of the Chancery Clerk of Neshoba County, and also at the office of Bell and Redding, Consulting Engineers, 612 Audubon Building, New Orleans, La. Plans, specifications and proposals will be furnished by the Engineers on receipt of Fifteen Dollars to guarantee their safe return.

Each bidder must accompany with a certified check, not less than five per cent. of the amount bid, made payable without qualifications to the Board of Drainage Commissioners of the Kentawka Drainage District.

The Contractor will be required to give bond in the sum of the contract bid.

The right to reject any and all bids is reserved.

Bids received Jan. 11th at Noon at Philadelphia, Mississippi.

A. D. SHARP,
I. J. A. MORRIS,
A. J. MAYO,
Drainage Commissioners, Kentawka Drainage District, Neshoba County.
BELL & REDDING,
Engineers.

Bids received January 22, 1918.

State Road Work

Pennsylvania State Highway Department,
Harrisburg, Pa.

Sealed proposals will be received at said office until 10 A.M., January 22, 1918, when bids will be publicly opened and scheduled and contracts awarded as soon thereafter as possible, for the reconstruction of the following: Two pieces of either One Course Reinforced Concrete or Bituminous concrete on a concrete base pavement 15,050 and 13,750 feet in length in Erie County; two pieces of vitrified block pavement 2065 and 4700 feet in length in Clearfield County; 39,340 feet of either bituminous macadam on Telford base or reinforced concrete pavement in Somerset County; 21,426 feet of either One Course Reinforced Concrete or Bituminous Concrete on a concrete base pavement in Allegheny County; and for the grading and drainage of 6707 feet of roadway in McKean County. Bidding blanks and specifications may be obtained free, and plans upon payment of $2.50 per set, upon application to State Highway Department, Harrisburg. No refund for plans returned. They can also be seen at office of State Highway Department, Harrisburg, 1001 Chestnut Street, Philadelphia, and 904 Hartje Building, Pittsburgh. J. D. O'Neil, State Highway Commissioner.

PROPOSALS

POSITIONS VACANT

DRAFTSMAN, experienced in machinery and piping layouts; apply in person if possible. The National Sugar Refining Co., Yonkers, N. Y.

DRAFTSMAN on structural steel and mechanical detail; must have five years' experience; state experience and salary first letter. Address Box 386, Iola, Kan.

AT ONCE, experienced pile driver wanted, and dock-builder foreman for Government job, Philadelphia; average wages $60.00 per week; write giving experience in detail and earliest date of starting. P454—Eng. News-Record, Phila.

EXPERIENCED structural draftsmen and detailers wanted for steady employment; location, eastern Pennsylvania. Write, stating experience and salary expected. P492—Eng. News-Record, Phila.

JUNIOR (civil) engineers for work on subway construction, New York City; provisional appointments pending examination; entrance salary, $1501 per annum, with opportunities for advancement; three years' construction experience required; technical graduates preferred; open to citizens only. Apply, giving full information as to education and experience, to the Public Service Commission, 120 Broadway, New York City.

MECHANICAL draftsmen wanted for general detailing and tracing for permanent positions. E. and T. Fairbanks & Co., St. Johnsbury, Vt.

CORRESPONDENTS in towns of 100,000 and up—We wish to connect with a correspondent in each city over 100,000 who will cover all large construction news for us each week for publication for our different papers, and will require but a few hours each week calling on engineers, contractors, etc., for construction items; give details as to present occupation, etc., which will be treated confidentially; good opportunity. Address Business News Department. McGraw-Hill Publishing Co., 10th Ave. and 36th St., New York.

SECRETARY-stenographer, young man preferred, not immediately subject to draft, who has had experience as stenographer in engineering office. Some knowledge of bookkeeping, office methods and filing system desirable. Construction work is just beginning and position offers excellent opportunity. Salary commensurate with experience and ability. Address Chief Engineer, Miami Conservancy District, Dayton, Ohio.

STRUCTURAL steel shop inspector wanted, competent to handle heavy railroad bridge work. Experience in inspection of movable bridges desirable; to be stationed in Pittsburgh coming year. C. E. C., Room 1403, 101 Park Ave., New York City.

STRUCTURAL draftsman wanted for railroad bridge and building work; technical men with experience in detailing steel work preferred; state age, education, experience, references and salary desired, and enclose sample of work. Address A. D. Case, Engr. of Structures, South Station, Boston, Mass.

STRUCTURAL concrete engineer to design and detail reinforced concrete buildings, foundations, walls, etc. Conditions of operation are competitive, rendering initiative and resource essential qualifications. Preference will be given to technical graduates. State fully experience, references, salary desired and status regarding draft. P525—Eng. News-Record.

SEARCHLIGHT SECTION

Employment Department

Pile Driving Inspectors and Dredging Inspectors

URGENTLY REQUIRED FOR GOVERNMENT WORK

Hog Island Shipyard, near Philadelphia, needs experienced Pile Driving Inspectors and Dredging Inspectors to lend their skill and energy to the patriotic project of building ships. Men trained in these branches are offered an unusual opportunity to serve the government in a vital way and at the same time improve their own position.

Apply by letter only.

ADDRESS BOX 999

AMERICAN INTERNATIONAL SHIPBUILDING CORPORATION
140 N. BROAD ST.
PHILADELPHIA

Mechanical Draftsmen Wanted

Thoroughly capable men wanted at once with experience in any or all of the following lines: industrial plant layouts, elevating, conveying and transmission machinery, piping, tank work and power plant construction.

Inquire Eleventh Floor 360 Madison Ave.] New York, N. Y.

POSITIONS VACANT

DRAFTSMAN wanted in office of engineer maintenance of way. One with railroad experience preferred. Apply at once. The Northern Ohio Traction & Light Co., 224 Hamilton Building, Akron, Ohio.

EXPERIENCED operator for Rumely tractor on road construction wanted, will employ for season's work; state experience, age, salary and when available. Address W. R. Greenlun, Co. Engineer, Leon, Ia.

STRUCTURAL and mechanical draftsmen and checker, preferably with experience in conveying machinery, wanted at once. Positions are permanent, advancement dependent upon ability. Opportunity for entering estimating and sales departments. Give statement of age, education, experience, references, salary desired and date available. Gifford-Wood Co., Hudson, New York.

DRAFTSMAN and structural steel detailer wanted in fabricating shop in Central New York. State experience and salary expected. P520—Eng. News-Record.

EXPERIENCED designer on electric baggage truck work wanted. P889—Eng. News-Record.

WANTED

Capable, energetic

CITY MANAGER.

Good executive council-elect City of Boulder, Colo., invites applications for position of City Manager under new charter, effective January first. Salary dependent upon man; population 12,000; big problems in water supply, paving, parks and drainage. State age, experience, special qualifications and give references in first letter.

Details concerning position furnished on request. *Address*

O. P. CLARK, City Clerk,
Boulder, Colo.

WANTED

SEVERAL MECHANICAL DRAFTSMEN

by large company in eastern Pennsylvania. State age, nationality, salary desired, when available, also experience and references in first letter.

P532—Engineering News-Record, 935 Real Estate Trust Bldg., Philadelphia, Penn

POSITIONS VACANT

DRAFTSMEN wanted at once, familiar with chemical plant design; New York district; state experience, salary and references. P. O. Box 376, Engineering Dept., Newark, N. J.

DRAFTSMAN, experienced in light structural iron work; inventive ability; give age, nationality and how soon available. P888—Eng. News-Record, Phila.

INSTRUMENTMEN, rodmen and draftsman wanted for railway work in the South. Apply Room No. 711, Union Station, Norfolk, Va.

SAFETY inspector for large plant in Philadelphia; only men with experience in this line acceptable; preference will be given to men with civil engineering education or drafting experience; good opportunity for the right man; salary about $30; state education, experience and references in first letter. P885—Eng News-Record, Phila.

CHIEF draftsman wanted by large water power company in the South. Must be able to handle men and have considerable experience in design of structural steel and concrete structures. Man familiar with design of hydro-electric power plants preferred. Position will be steady. Send full information as to age, education and experience, salary expected and when able to report. P880—Eng. News-Record, Philadelphia.

CIVIL or hydraulic engineer wanted; experienced in concrete designing and with building experience. P879—Eng. News-Record, Chicago.

STRUCTURAL steel draftsman with one or two years' experience wanted at once. Man familiar with mill building work preferred. Give age, experience and lowest salary to start, and state when can report. Southern Engineering Co., 503 Realty Bldg., Charlotte, N. C.

EXPERIENCED transitman wanted on railroad construction in Ecuador. Salary, $150 gold per month. Passage paid. Address with references, W. G. Fox, Ambato, Ecuador, South America.

RAILROAD in Middle West, whose inventory will be made in 1918 and 1919, has the following positions vacant: One roadway pilot, one instrument man, two computers, five draftsmen. P876—Eng. News-Record, Chicago.

ENGINEERS familiar with boiler houses equipped with Cox Stokers. Large corporation. Experienced first-class men for eight-hour shifts required. P873—Eng. News-Record, Philadelphia.

DESIGNER wanted with shop detail experience by railroad company; location, Detroit; salary, $150. P892—Eng. News-Record.

MECHANICAL engineer with factory experience; good opportunity for right man; give list of references and mention age and salary desired. P891—Eng. News-Record, Phila.

CIVIL SERVICE

SCIENTIFIC assistant (Public Health Work), Jan. 15, 1918; salary $1200 to $2000 per year. Civil Service Commission, Washington, D. C.

EMPLOYMENT AGENCIES

GENERAL Engineering Agency, Fulton Building, Pittsburgh, offers draftsmen, transitmen, plant engineers, millwrights and resident engineers over 200 desirable Eastern or Central States locations. If you are a draftsman, designer or squad chief, we will bid 10% to 25% for your services.

SEARCHLIGHT SECTION

Employment Department

EMPLOYMENT AGENCIES

Western Engineering Openings

Instrumentmen and draftsmen, $90 to $125; rodmen, $50 to $85; irrigation and power projects. Write immediately Business-Men's Clearing House, Denver, Colo. Applicants previously listed with us kindly advise present address and requirements.

Marine Draftsman

(Several) $2200 to $3000; also mechanical engineers, superintendents, etc., steel and wooden ship building. Office Service Company (Agency), 149 Broadway, New York City.

CORRESPONDENCE SERVICE

THE undersigned provides a confidential service designed to locate openings, through correspondence, for men earning not less than $2500 and up to $25,000; all lines. Not an employment agency, but a constructive, initiative service, covering individual negotiations. Established 1910. Complete privacy assured; present connections in no way jeopardized. Send name and address only for explanatory details. R. W. Bixby, T1 Niagara Square, Buffalo, N. Y.

POSITIONS WANTED

Mechanical and Electrical

MECHANICAL engineer wanted by company engaged in textile bleaching and finishing; excellent surroundings; 18 miles from Boston, Mass.; applicant should be capable of taking charge of all maintenance work, including power, piping, machinery and upkeep of buildings; permanent position; state age, relation to draft, experience and salary expected. P890—Eng. News-Record.

MECHANICAL engineer, 36, 15 years' experience in designing and installing special machinery and power plants, desires responsible position. PW886—Eng. News-Record, Phila.

ENGINEER; 18 years' experience in factory maintenance, design, equipment and construction, handling of men; A-1 credentials. PW491—Eng. News-Record, Phila.

Civil Engineer

GRADUATE civil engineer; 10 years' experience highway, railroad and hydro-electric location and construction; familiar with all types hard surface pavements. PW499—Eng. News-Record, San Francisco.

CIVIL engineer and draftsman wants position in the West or Southwestern part of the United States; American, married, age 30, well up in draft; references upon request. W. L. Hand, Fort Madison, Iowa.

CIVIL and sanitary engineer, M. Am. Soc. C. E., with 27 years' experience, desires an executive position; during the past four years has been sanitary engineer for a city of 70,000; plans for a complete sewerage system and disposal plant, have been completed and approved by the Penn. Board of Health; will be open for engagement Jan. 1, 1918. PW434—Eng. News-Record, Phila.

ENGINEER-manager (Assoc. Mem. Am. Soc. C. E.), desires engagement. Available about Dec. 1. Specialty, river and harbor or allied construction. In charge of large works. Over twenty years' active practice, five years foreign. Salary, $3000; foreign, $3000. PW1009—Eng. News-Record.

CIVIL engineer, age 25, wishes to make connections with city or county engineer for coming year; thoroughly experienced with municipal and road work; location, Iowa. PW484—Eng. News-Record, Chicago.

POSITIONS WANTED

CIVIL engineer, 31, ten years' experience design and construction of water-works, sewerage, roads, pavements, steel, concrete and timber structures, at present employed on construction of industrial plant, desires permanent responsible position; least salary, $2500. PW483—Eng. News-Record, Chicago.

CIVIL engineer, 43, experienced, responsible charge surveys, draftsman, computer, supervision and resident engineer, municipal and allied improvements, developments and construction, railroad preliminary location and construction, cantonment construction; have own instruments. PW858—Eng. News-Record.

CIVIL engineer, 31, married, open for permanent engagement Feb. 1; experienced in municipal, industrial and highway work, topography, design and construction of concrete bridges and structures; Eastern location. PW895—Eng. News-Record.

ENGINEERING executive, works or production engineer in machinery or chemical industry; 37 years old; best of training and 12 years' engineering experience; an organizer who can do things; will start as assistant or department manager. PW893—Eng. News-Record, Chicago.

Laborers and Mechanics

furnished for all kinds of construction and industrial works; also for lumber camps and saw mills. Commissary conducted on a modern plan, and no alcoholic beverages sold in connection with it.

EMPIRE LABOR AGENCY
Tels. 1745 & 3164 *Franklin* 93 Mulberry St., N. Y.

The Engineering Agency
Incorporated
Established 24 Years

Offers Opportunities in Engineering and Drafting

in all civil, structural, railroad, mining, municipal, mechanical and electrical lines.

1662 Monadnock Block, Chicago, Ill.

Employment Experts

CORPORATIONS, INDUSTRIAL ORGANIZATIONS, ENGINEERING, MANUFACTURING AND COMMERCIAL ENTERPRISES requiring high-grade EXECUTIVES, DEP'T MANAGERS, TECHNICAL HELP, OFFICE HELP, ETC., can obtain same through our organization. We secure the right man for the position. Specify your requirements. We guarantee results and satisfaction. Each order given special attention. Any person qualified for a better position should write us.

20th CENTURY EMPLOYMENT AGENCY
642 6th Ave., New York City

DO YOU NEED LABORERS? ***Just Call Canal 8970***

Any number of laborers of any nationality supplied on short notice anywhere. Commissary conducted on a new system; courtesy, promptness, efficiency.

The Central Labor Agency, *Main Office*: 139 Mulberry St., N. Y

Announcement

According to the by-laws the entrance fee to membership in American Association of Engineers automatically increases January 1, 1918.

Applications postmarked prior to the above date will entitle applicant to the current entrance fee of $2.00.

Time is Limited—Act Now!

American Association of Engineers
601-29 So. La Salle St., Chicago.
220 W. 42nd St., New York
502 Hibbs Bldg., Washington, D.C.

SEARCHLIGHT SECTION

Employment Department

POSITIONS WANTED

CIVIL engineer, 34, Assoc. M. Am. C. E., technical graduate, open for executive position; experienced and successful in dealing with public, executive officials and labor; wide experience in engineering and construction lines. PW899—Eng. News-Record.

ENGINEER of design, technical graduate, three years' experience with bridge company, nine years' experience with railroad s and contractors, steel and concrete bridges, shops, elevators, power houses, etc.; at present employed; salary $2400. PW897—Eng. News-Record, Chicago.

VALUATION engineer of railroad on which Federal valuation work is nearing completion, will be available in near future for similar work elsewhere; age 42; 20 years' experience; salary, $3600. PW482—Eng. News-Record.

YOUNG engineer, 4½ years' experience, technical education, desires position with engineer or contractor. Good references. Eastern location preferred. Address G. E. Wright, 111 E. Matson Ave., Syracuse, N. Y.

FORMER assoc. professor of civil engineering desires university position; has also had 12 years' practical experience in structural, hydraulic and municipal engineering, including responsible executive work. Would consider any location, Western position preferred. PW883—Eng. News-Record, Chicago.

IRRIGATION, drainage and water supply engineer; technical graduate; Assoc. Mem. Am. Soc. C. E. Eleven years' experience, surveys, designs and construction. Seven years in U. S. Reclamation Service. Very successful with men on construction. Excellent references. PW 881—Eng. News-Record, San Francisco.

ENGINEER (27) married, technical education; employed along electrical lines; desires position where education, experience and inclination count; experience; 2 years' general surveying (field and office) 2 years' assistant engineer in city of 14,000. 1 year drafting. References. J. Nickols, 502 2nd Ave., Albany, N. Y.

POSITIONS WANTED

GRADUATE civil engineer, 1913, experienced structural steel and reinforced concrete designer, now handling responsible line and grade work, desires permanent position. PW877—Eng. News-Record, Philadelphia.

GRADUATE civil engineer; eight years' experience on street and highway work; three years water-works and sewers; one year canal work; seeks position along similar lines, anywhere. Age 36, married, best of references. G. Y., c/o Century Leather Goods, 1 West 34th St., N. Y.

CIVIL engineer, 35, married, fifteen years' planning and execution of construction work, twelve years' railroad experience, an expert draftsman. Fitted to take responsible charge of any railroad or civil project and complete it. An abstainer. Will locate anywhere. Salary, not less than $2500 considered. PW875 — Eng. News-Record.

CIVIL engineer and executive; college graduate, 29. Eight years' broad experience; railway construction, survey, valuation; land and topographic surveys. Contractor's engineer, highway, industrial, and cantonment construction; married. PW874—Eng. News-Record, Phila.

CIVIL engineers; three high-grade first-class men, experienced in railroad construction work for positions with railroad contractor; must be live wires and of broad experience. P490—Eng. News-Record, Cleveland.

ENGINEERING salesman or executive, 12 years' succesful experience covering both classes of work; university training; best references. PW863—Eng. News-Record.

CIVIL and hydraulic engineer, M. Am. Soc. C. E., 13 years' experience in design and construction; responsible charge; graduated; available at short notice. PW864—Eng. News-Record, San Francisco.

GRADUATE civil engineer, 32 good organizer, desires position as construction engineer or superintendent of construction. Experience covers topographic and hydrographic surveys; design and construction of hydro-electric plants, sub-stations, transmission lines, etc. Available Jan. 1. PW523—Eng. News-Record.

POSITIONS WANTED

Bridge and Structural

ENGINEER, construction and maintenance, 12 years' experience in charge of design, erection and maintenance of industrial and power plants; minimum salary, $300. PW423—Eng. News-Record, Cleveland.

Draftsmen

YOUNG man, 24, technical graduate, 6 years' experience as draftsman, including 1½ years on track work. PW443—Eng. News-Record.

REINFORCED-CONCRETE designer and superintendent; experienced on buildings, tanks, chimneys, retaining walls, foundations and Complicated structures. PW508—Eng. News-Record, Chicago.

DRAFTSMAN junior, 20, experienced; two years' engineering education. PW898—Eng. News-Record.

DRAFTSMAN with five years' practical experience with architects and engineers desires position with first-class firm on or near New York; experience in structural steel, reinforced concrete, industrial plant layout, etc.; best of reference. PW887—Eng. News-Record.

Superintendents

SUPERINTENDENT of Construction. American, 40, hustler, practical; experienced in all kinds of construction. PW 869—Eng. News-Record.

SUPERINTENDENT of construction; first-class executive, broad experience; difficult foundations, locks, dams, bridges, building and industrial plant construction; concrete a specialty. PW1001—Eng. News-Record.

SUPERINTENDENT, 12 years in charge of large construction jobs, tunnels, heavy trench and foundation work; irrigation, underground, reinforced concrete and difficult excavations a specialty; first-class, practical all-around man; A-1 references, go anywhere. PW436—Eng. News-Record.

IRRIGATION or drainage engineer, ten years' experience as construction superintendent, all kinds of work associated with large irrigation project construction and maintenance, land leveling and preparation for seeding, water distribution, drainage studies; have worked under eight prominent irrigation engineers on six of the largest irrigation projects; age 34; married; Assoc. Mem. Am. Soc. C. E. PW452—Eng. News-Record.

SUPERINTENDENT of construction, broad experience with general contractors on commercial, industrial buildings and fine residences; capable assisting in office and estimating. PW445—Eng. News-Record.

CONSTRUCTION superintendent, engineer, 34, Assoc. Mem. Am. Soc. C. E., 13 years' pile driving, timber bridges, docks, wet excavations, concrete, railroad, sewer, disposal plant, shipways and general construction work. Phila. interview. PW862—Eng. News-Record.

SUPERINTENDENT or manager for general contractor, 20 years' experience in public and private buildings, locks, dams, power houses and coffer dams. Hustler and a good organizer, married, 38 years old. American by birth. Salary and commission. W. H. D., 301 Loewen Apartments, Oshkosh, Wis.

SUPERINTENDENT of construction; 20 years' experience in building roads, steam and street railroads, subway and elevated structures, trunk sewers, docks, buildings; open after Jan. 15; best references. PW896—Eng. News-Record.

You

Can Fill that Need

Wanted: Designers of Concrete and Steel

Special Courses of Home Study have been arranged by well known Engineer with 30 years' experience.

Designers of Steel and Concrete are scarce, the country needs trained men and needs them quick. These courses give actual experience in designing and estimating the cost of Steel and Concrete Structures in the shortest possible time. An opportunity for the ambitious man to get ahead. Also a course in Structural Drafting. *Write today for information.*

M 1006 Eng. News-Record.

SEARCHLIGHT SECTION

Employment Department

POSITIONS WANTED

FORMER contractor desires position as estimator, superintendent or office manager for builder. PW486—Eng. News-Record.

SUPERINTENDENT, graduate civil engineer; 13 years' building erection, design and varied other experiences; salary or percentage of costs. PW459—Eng. News-Record.

SUPERINTENDENT of heavy construction wants position with good company; good man on reinforced concrete, brick and plaster work; good rigger and organizer; very best references. PW500—Eng. News-Record.

SUPERINTENDENT water-works; 15 years' experience in management, design and construction of water-works. Experienced in filter operation. Available Jan. 1, 1918. PW878—Eng. News-Record, Chicago.

BUILDER'S estimator, office manager, superintendent, age 31, civil engineer, 9 years' experience contracting work and directing business. Highly responsible. PW882—Eng. News-Record, Phila.

CONSTRUCTION engineer or assistant superintendent; at present employed in above capacity; 16 years' varied construction experience, initiative and executive ability; references furnished both as to ability and character from former and present employers; age 34; married; $200 per month; available Jan. 1, 1918. Address W. E. F., Box 152-Burgettstown, Penn.

MISCELLANEOUS

GENERAL foreman, with 150 timbermen and laborers, expects to finish present job in one month; experienced on subway, sewerage, carpentry, timber and concrete work. PW422—Eng. News-Record.

ENGINEER

Age 40, married, nineteen years' experience, including railroad position on heavy construction work up to and including that of chief engineer, engineer for contracting company, and in private practice.

Especially qualified to plan or take charge of construction work. Connection desired with industrial company or contractor.

Interview east of Chicago.

Least salary considered $4000.

PW 872—Eng. News-Record, 935 Real Estate Trust Bldg., Philadelphia, Pa.

POSITIONS WANTED

EXPERIENCED purchasing agent and timekeeper desires position where genuine ability will be appreciated; full charge of field office upon large works for past six years; age 28, married; available Feb. 1, 1918. PW426—Eng. News-Record, Phila.

EXECUTIVE position wanted by experienced executive, thirty-one years of age and having the following qualifications: Graduate of an engineering university and a commercial college, experienced in accounting, construction, contracting and manufacturing. Bank references and names of past and present employers furnished to substantiate claims of a successful record in secretarial and managerial positions; also to advise you of ability, character and personality. PW 526—Eng. News-Record.

PURCHASING agent and contract manager; university and Massachusetts Institute of Technology graduate; 7 years' practical experience with two of the largest general contractors operating in the United States; 4 years in present position. Available on two weeks' notice for connection with company offering good future; present salary $3000. Highest regferences upon request. Age, 29; dependents, 2. Address J. M. C., Apt. 5B, 580 St. Nicholas Ave., New York City.

EVENING WORK

Reinforced Concrete Engineer

with wide experience in all kinds of structures would make plans, designs and estimates. W884—Eng. News-Record.

AGENTS AND SALESMEN

Fine Chance for Good Man

One of the largest manufacturers of Contractors' equipment has a desirable opening in the East for a salesman of exceptional character and ability. If you can qualify, write full particulars promptly. W868—Eng. News-Record, Phila.

Do You Want Agent in Canada?

I am in position to represent you directly to the trade in Canada. Correspondence is the first essential between you and me. Irving Smith, 809 Unity Bldg., Montreal, Canada.

SALESMAN WANTED

An experienced Concrete Mixer Salesman. Write fully as to qualifications, salary expected and references. Replies confidental *Address*

"MIXER SALESMAN", c/oJ. R. Kay Co., Conway Bldg., Chicago, Ill.

AGENTS AND SALESMEN

Salesman Wants Position

With four years' experience and large acquaintance throughout the State of New York, eastern Pennsylvania, Province of Ontario, and smaller acquaintance in the New England territory, representing large steel and iron industry, selling structural and fabricated material; would like to conduct with some reliable company; good reference. W894 Eng. News-Record.

WANTED

Contracts Wanted

by reliable firm in the following line of work to extent of $10,000; structural steel erection, hand railing, piping, reinforced concrete. Donnell-Zane Co., 309 Broadway, New York City.

PATENT ATTORNEYS

IMPROVEMENTS wanted; send for free Bulletins listing manufacturers wants and book "Inventions—Patenting and Promoting." Lancaster & Allwine, 272 Ouray Building, Washington, D. C.

BUSINESS OPPORTUNITIES

Coke Oven Engineer

with extensive experience in construction of byproduct coke ovens and benzol plants now in charge of the execution of such contracts for a coke oven company, wishes to communicate with large engineering corporation who will take up the construction of original designers of continuous coke oven and benzol plants. Will consider a salary of $6000 per year for services and designs now prepared to be submitted for consideration. BO529—Eng. News-Record.

Turbines

For heads of 150 to 5000 ft.; 90 to 95% efficiency for full and partial load. Patented in Switzerland, application filed in America. Users and representatives sought. Steiner, Engr. Ruhbank, Zafingen, Switzerland.

FOR SALE

Dryer Cars, Boiler, Etc., Cheap

300 Dryer cars, double deck, roller bearings, used three months; good as new; cheap for quick sale; also 260 hp. Heine boiler, 1000 hp. Cookson heater, filter and oil seperator. J. P. Vinson, 45 South Lexington Ave., St. Paul, Minn.

WAR WORK WANTED

Experienced graduate engineer and business man wants executive position for period of war in some war industry. Some experience in smelting and mining work. Extensive experience in design and construction of buildings, grain elevators, bridges, etc., also in sales management, financing, leasing and handling real estate. Head of own engineering business for past nine years, making specialty of reinforced concrete and structural designing and reinforcing steel; also partner in real estate and investment business. Am a high-grade man and will consider only high-grade position with good parties. *Address*

Room 446, Maryland Hotel, Minneapolis, Minn.

EXECUTIVE
PURCHASING AGENT
CIVIL ENGINEER

Seeks Position

Present salary $200. *Age* 30. *Draft exempt.*

Experience in charge civil engineering design and purchasing of electrical, mechanical and civil engineering materials.

PW871—Engineering News-Record.

Your Advancement

is largely in your own hands—it is doubtful if anyone else is worrying over it

Better positions are constantly being secured through small advertisements in the "Positions Wanted Columns"

60 cents for 20 words

SEARCHLIGHT SECTION

Miscellaneous

FOR SALE

Pumping Plant

Second-hand pumping plant 24-in. Worthington single-suction centrifugal pump; 155-hp. Babcock & Wilcox water-tube boiler; 240-hp. Buckeye engine, vertical, cross-compound; pumping capacity, 15,000 gal. per min., 36-ft. lift; condenser, water heater, boiler-feed pump and other attachments, complete; in perfect shape, ready to run. For particulars address R. Onishi, Pierce, Tex.

Transit

One transit, first-class condition (Queen's), 5-in. needle, $100. Write Purchasing Agent, Mount Royal Tunnel Co., 411 Dorchester St. West, Montreal, Canada.

Steam Shovel

One Marion revolving steam shovel, Model 28; 1 five-ton Buffalo Pitts tandem roller, and 1 twelve-ton Buffalo Pitts roller, Martin Murray, Burdett Building, Troy, N. Y.

Boiler

A.A. 150-hp. Wickes Bros. horizonztal return-tubular, with stack and fittings, complete and in excellent operating condition; bargain. For further particulars, Power Equipment Co., Inc., Astor Trust Building, New York City.

FOR SALE

Erie Shovel

TYPE B, ¾-yd. bucket; first-class order. Price, $5500. FS859—Eng. News-Record.

Pump

1 rebuilt Worthington duplex steam pump, 12 x 8¼ x 10-in., first-class condition. Not used since rebuilt. Western Felt Works, 4115 Ogden Ave., Chicago, Ill.

Steam Engine

A.A. 125-hp. Fitchburg, Corliss, complete, fine condition; bargain. For further particulars, Power Equipment Co., Inc., Astor Trust Building, New oYrk City.

Going Water Power For Rent or For Sale in center of city; block from railroad; splendid location for factory or cereal mill. Geo. O. McArthur, Baraboo, Wis.

WANTED

one model No. 36

Marion Steam Shovel

or equivalent. Reach and load in cars 15 ft. from top of rail to base of cut.

W 900—Eng. News-Record
1570 Old Colony Bldg., Chicago, Ill.

WANTED

AIR COMPRESSOR

Capacity 75 to 85 ft. per min. Belt or gear drive. State age, make, best cash price F.O.B. Rock Island, Ill., and all other necessary information.

The Frazier-Davis Const. Co., Rock Island, Ill.

Wanted

Air Compressors

2—150 to 400 ft. capacity two-stage machine preferred

W419—Eng. News-Record, 1570 Old Colony Bldg., Chicago, Ill.

RENT

40 ft. x 140 ft.

FIRST FLOOR AND BASEMENT

721-3-5-7 ARCH STREET

in the heart of the machinery district of

PHILADELPHIA

LIEBERMAN & AXILBUND, 1237 Market St., Philadelphia, Pa.

"Central Leasing a Specialty"

WANTED

FOR IMMEDIATE DELIVERY

Turbo-Generators

1—2000 Kw. (or 3000 Kw.) A. C. Turbo-Generator. Turbine for 150 lb. steam pressure. Generator for 600 volts, 3-phase, 60-cycle current. To include condenser, water and air pumps, and motor generator exciter set.

1—500 Kw., D.C. Turbo-Generator Turbine for 150 lb. steam pressure. Generator to be compound wound, for 220 volts, to include condenser, water and air pumps.

PRESSED STEEL CAR COMPANY
Pittsburgh, Pa.

FOR SALE

STEEL BUILDING MATERIAL

Extra heavy material for a six-story structural steel building, 520 tons. This building has never been erected. Steel can be changed to suit any style of building.

M. H. O'DONNELL
805 Trumbull Avenue, Detroit, Mich.

Scrap Wanted

SUCH AS

RAILS — CAR WHEELS HEAVY CAST MACHINERY — COPPER WIRE

All grades of scrap metals.
Advise us quantities and give full details.
GET OUR PRICES.

NATIONAL METAL & RUBBER CO.
39 India Wharf, Boston, Mass.

WANTED

Send us a list of any

EQUIPMENT

you may have which you wish to dispose of. ALSO STATE YOUR WANTS.

Miller-Crippen Equip. Co., Inc.
423 First Nat'l Bank Bldg., Syracuse, N. Y.

WANTED

1—18-ton, 42-in. gauge saddle tank

LOCOMOTIVE

6—Climax 42-in. gauge, logging

CARS

L. BRENNER & COMPANY
Lebanon, Pa.

WANTED

8-wheel

LOCOMOTIVE CRANE

20-ton, 50 to 60-ft. boom.
First-class condition.
Address, giving full particulars,

Pearson & Ludascher Lumber Co.
Philadelphia, Pa.

WANTED

CONTRACTORS' EQUIPMENT
of all kinds, for cash—also
PIPE AND FITTINGS

PIPE & CONTRACTORS SUPPLY CO.
3 Dover St., New York, N. Y.

Little "WANT" cards bring big results in the News-Record

SEARCHLIGHT SECTION

Second Hand Equipment

FOR RENT

ONE CEMENT-GUN

Equipment complete, with Chicago Pneumatic Fuel Oil Driven

COMPRESSOR

183 lb. per minute. Equipment may be leased separately.

MICHAEL STAUB, Mamaroneck, N. Y.

FOR RENT

2 DUMP TRUCKS

5 ton Pierce-Arrow and 6 ton Garford with 5 ton Watson Trailer. Will rent by day or contract.

H. B. Sproul Construction Co., Inc.
Peekskill, N. Y.
Telephone *Peekskill* 836 J.

Keep your eye on the Searchlight and your advertisements in it.

Immediate Delivery

LOCOMOTIVE CRANES

2—150-ton **Industrials**, 50-ft. booms.
1—30-40-ton **Ohio**, new this year.
1—17-ton **American**, 40 ft. boom, 4-wheeler.
1—15-ton **Browning**, 40-ft. boom, 4-wheeler.
1—20-ton **"O. & S."** NEW, 8 wheels.
1—10-ton **Industrial**, for sale or rent.
5— 5-ton NEW Cranes made by a standard manufacturer.
(Deliveries, one in week and one per week thereafter.)

MOTORS

100—NEW, up to 50 H.P., any current.

BOILERS

2—100 H.P. Ames.
2— 80 H.P. "R. & M."
4—150 H.P. Edgemore.
1—150 H.P. Hodge.
1—125 H.P. Portland—Vertical.
2—200 H.P. Marine—Fire Tube.
1— 75 H.P. Scotch—Internal Combustion.
5—72 x 18 Horizontal Return Tubular.
2—125 H.P. Locomotive Type.
Also a number of good offerings in **"B. & W.," Stirling** and **Heine** Water Tube Boilers.

CARS

370—Flat Cars, 25 ton capacity.
Tank Cars, equipped for oil or acid.
Gondola Cars, 80,000 lb. capacity.

DERRICKS

Guy, Stiff Leg, Traveling.

DREDGES

Hydraulic, Suction, Dipper. We solicit Dredging Contracts.

DRILLS

Let us know your requirements.

ENGINES

1—NEW, Girder Frame, Balance Piston Valve, 100 H.P., 14 x 30. A Bargain.
Also some good offerings in Steam, Gasoline, and Direct Connected Sets.

ELECTRICAL EQUIPMENT

Motors, Generators and Motor-driven Accessories.

HOISTS

Steam and Motor-driven. Send for List.

LOCOMOTIVES

Switchers, Saddle Tank, Tenders. Any gage.
1—16-ton **Gasoline Locomotive,** standard gage.
3—10-ton **Electric Locomotive,** 36-in. gage.
3—3- to 6-ton **Electric Locomotive,** 42-in. gage.

SHOP MACHINERY

Complete equipment for manufacture of 3-in. shells.

CONCRETE MIXERS

What do you require? If we haven't it we know where to get it. Steam, Gasoline or Motor driven.

PILE DRIVERS, PILING, PIPE, PUMPS RAILS

All rails are high, but we have some good offerings even in this market.

ROPE

Crucible Steel, Plow Steel, Swedish Iron, 50 tons, New and Used. Immediate.

STEAM SHOVELS

A-28 Marion, 14-B **Bucyrus, "O" Thew,** and others, heavier.

WATER-CRAFT

Tugs, Derrick Lighters, etc.

Contractor's Accessories, Railroad Equipment

FRANK T. CRAVEN COMPANY
50 Church St., New York
Telephone 6341 Cortlandt

DECEMBER SPECIAL SNAPS

HOISTING ENGINES

1—6' x 8, D.C., D.D. Marsh-Henthorn Hoisting Engine, with boiler, direct connected with swinger.
1—7 x 10 D.C., 3 drum Marsh-Henthorn Hoisting Engine, with boiler.
1—7 x 10 D.C., D.D. Lidgerwood, with boiler.
3—7 x 10 D.C., Swinging Engines, reversible.
1—8½ x 10, D.C., Swinging Engine, reversible.
1—5 x 8 Lidgerwood Reversible Swinging Engine.
1—6½ x 10 D.C., D.D. National, complete with boiler.
1—6½ x 8, D.C., D.D. Lidgerwood, with boiler.

SHOVELS

1—Thew "O" ¾-yd.
1—Osgood No. 18, ¾-yd.
2—Bucyrus 70 "C."

LOCOMOTIVES

1—18 x 24 Baldwin Saddle Tank.
1— 9 x 14 Baldwin, 36-in. gage.
1— 9 x 14 Porter, 36-in. gage.
1—10 x 16 Davenport, 36-in. gage.

CARS

10—40-ton capacity Gondolas.
38— 4-yd. Western Dump Cars.
20— 3-yd. K. & J. Dump Cars.
10—12-yd. Western Dump Cars.

DRAG LINES

2—1-yd., all steel, 40-ft. boom, full revolving.
1—1½-yd., all steel Lidgerwood, 60-ft. boom.

CRUSHERS

1—Austin 4, 5, 6 and 7½.
1—Gates 3D, 7½D, 8K, 9K.

RAIL

40 ton of 16 lb.
60 ton of 40 lb.
1000 ft. 30-in. Industrial Track.
250 ton of 70 lb.

PUMPS

1—Canton-Hughes Duplex Compound, high pressure, 12 x 18 x 10 x 18, 800 gal. per min., and various other makes and sizes.

All the above equipment is owned by us and is in good condition, ready for immediate operation and shipment, guaranteed to be exactly as represented.

MARSH-BOTHE MACHINERY COMPANY, Sales Engineers
975-980 Old Colony Building, Chicago, Ill.

FOR SALE

Cantonment Contractor Shipyard Builders

Attention

Smith No. 4 **Concrete Mixer**—17 cu. ft., 7 x 8 **Vertical Engine.**
1—**Air Receiver**—10 ft, 6 in. x 4 ft.
15—1 cu.yd. Atlas 2-way steel **Dump Cars,** 24 in. gage.
1—Mead-Morrison 4½x6 Independent **Swinging Engine.**
New and Relaying Yellow Pine **Ties** for immediate Delivery at normal prices.
Several **steel** and **wooden tanks** 500 to 2000 gallon capacity.

Tell us your wants—we may have the equipment you require at our yard.

DOOLEY-KILLIAN CO., Inc.
26 Cortlandt St., New York City

FOR SALE—Through plate

GIRDER BRIDGE

Designed for 60-ton interurban cars, made up of two-plate girders length 53 ft., depth 4 ft, with suitable floor system,

INDIANA RAILWAYS & LIGHT CO.
Kokomo, Indiana

New Advertisements
for the
SEARCHLIGHT SECTION
can be received until 4 p.m. Tuesday for Thursday's issue

Motor Generator Set

1—75 K.W. Motor Generator Set, consisting of No. 180-L, Type S.K., Westinghouse, 75 K.W., 125 volts, 600 ampere, 860 R.P.M., compound wound, commutating pole generator, direct connected to one 112 H.P., type C.S., Westinghouse, 440-volt, 3-phase, 60-cycle, 860 R.P.M Motor. Outfit includes fusedauto starter, but no switchhoard.

Controller

1—New 80 H.P., 220-volt, D.C., Cutler-Hammer reversing magnetic Controller.

Mill Motor

1—New 80 H.P., No. 80 M.C. Westinghouse, 230 volt, Series-wound, mill motor.

THE WELLMAN-SEAVER-MORGAN COMPANY, Cleveland, Ohio

SEARCHLIGHT SECTION

Second Hand Equipment

Rails . . .

100 tons 16 -lb., New
400 tons 12 -lb., New
600 tons 20 -lb. Relayers, with bars
500 tons 25 -lb. Relayers, with bars
400 tons 35 -lb. Relayers, with bars
1000 tons 45 -lb. Relayers, with bars
900 tons 56 -lb. Relayers, with angles
600 tons 60 -lb. A.S.C.E., New, with angles
250 tons 67½-lb., New, 5-in., with angles
350 tons 75 -lb. A.S.C.E., New, with angles
125 tons 90 -lb. Santa Fe standard
500 tons 100 -lb. PRR, with angles

Plates . . .

225 pcs. ½-in. Steel Plates, ranging in width from 2 ft. 3 in. to 4 ft. 4 in. and in length from 6 ft. to 18 ft. 10 in. **Almost new.**

Wire Rope . . .

2 pcs. 1-in. Galvanized Cast Steel, 4000 ft. **Excellent**
11 pcs. 1¼-in. American Plow Steel, 675 ft. lengths. **Practically new**
1 pc. 2½-in. Cast Steel, 2100 ft. **Good**

Locomotives . . .

Rod Engines, 4-ft. 8½ in. gage
2—49½-ton Vulcan, 6-wheel Switchers. Practically new.
Saddle Tanks, 4-ft. 8½-in. Gage
2—10 x 16-in., 18-ton Porter, with air brakes.
Saddle Tanks, 36-in. Gage
1—5 x 8-in., 4-ton Porter, 150 lb. **Thoroughly overhauled.**
1—6 x 10-in., 7-ton Davenport, 160 lb. **Good.**
14—9 x 14-in., 14-ton Porter, 140 lb. steam.
5—9 x 14-in., 14-ton Vulcan, 140 lb. steam
1—9 x 14-in., 14-ton Davenport, 140 lb. steam
1—9 x 14-in., 14-ton Lima
1—10 x 16 in., 18-ton Davenport, 160 lb. steam
Saddle Tanks, 24-in. Gage
3—7 x 12-in., 9-ton Davenport

Road Rollers . . .

2—15-ton Kelly-Springfield, 3-wheel steam. **First-class**

Piling . . .

Large stock U. S., Lackawanna, etc. **All sizes and lengths**

Hoists . . .

Steam, with Boiler
2—5 x 8 Flory, D.C., D.D. **First-class**
1—7 x 10 Lidgerwood, D.C., D.D. **First-class**
2—8½ x 10 Lidgerwood D.C., D.D. **First-class**
Electric
1—Lidgerwood Single Drum Reverible, geared to 37 H.P. G.E. motor, 3 phase, 60 cycle, 220 volt, complete. **Excellent**
1—American Single Friction Drum, geared to 82 H.P. G.E. motor, 3 phase, 60 cycle, 220 volt, complete. **Excellent**

Boilers . . .

1— 45 H.P. Loco type, 100 lb. pressure
1— 60 H.P. Loco type, 100 lb. pressure
2—150 H.P. Scotch Marine Type, corrugated furnaces, 3½-in. tubes, 160 lb. steam pressure

Tanks . . .

26—27,100 to 38,500 bbl. Oil Storage. A-1
Also all other sizes, storage and pressure.

Buying or Selling—makes no difference to us, just so it's BIG. *Watch this space!*

Cars, Portable Track, Cranes, Air Compressors, Heavy-Machinery,

ZELNICKER
WALTER A. ZELNICKER SUPPLY COMPANY
St Louis

Engines, Pumps, Generators, Beams, Skips, Mixers, Buckets, etc.

Don't forget to get Bulletin 227 — 44 pages of the livest Bargains in the field — FREE!

STEEL SHEET PILING

200 pieces, U. S. or Lackawanna, about 20 ft. long.

Excellent condition.

BROWN & SITES CO., 30 Church St., New York, N. Y.

TURBINES

AND TRANSMISSION MATERIAL

2—50-in. Samson turbines
1—Woodward governor, 1200 H.P. capacity, size F, No. 1609
3—Iron pulleys, 5 ft. 9 in. diam., 38-in. face
5—48-in. Clutches
17—Bridge trees
71 ft. 5 15/16-in. Shafting
6—Quill boxes
10—5 15/16-in. Boxes
3—5 15/16-in. Solid couplings
1—Pulley coupling, 3-ft. diam., 8-in. face, 5 11/16 in. bore
1—Pulley, 24-in. diam., 9-in. face
5—Clutch stands
1—Rope drive, sheeves, pulleys and hangers complete

J. F. NOLL, *Supt. Public Works*, Harrisonburg, Va.

CENTRIFUGAL PUMPS

	Cap. Gals
4—12-in. Worthington Belted	4000
2—10-in. Morris Belted	3000
2— 8-in. Wickes Belted	2000
3— 8-in. Wickes, with engines	1500
1— 6-in. Morris, with engines	800
1— 4-in. Wickes, with engines	400
1— 4-in. two stage, with 40-H.P., 220-volt, 60-cycle motor	300
1— 3-in. Gould, with 3 H.P., 220-volt, D.C. motor	200

Immediate Delivery.

WICKES MACHINERY COMPANY, Jersey City, N. J.

FOR SALE

One Worthington Triple Expansion

CONDENSING PUMP

10 x 16 x 25 x 13 x 18. In fair condition, cost new over $10,000.

Will sell reasonable.

KANSAS CITY STOCK YARDS CO.
Kansas City, Missouri

Keep your eye on the Searchlight and your advertisements in it.

REINFORCING RODS

30,000 lb. new corrugated bars, stock length. List sent on application.

JOHN W. COWPER CO., Garden City, N. Y.

CLAM SHELL

FOR SALE

Brown Hoist, patented two-yard bucket. Has been used for emergency work only. Like new.

L. G. Everist, *Incorporated*, Sioux City, Iowa.

SEARCHLIGHT SECTION

Second Hand Equipment

For Sale—Sound Plant in Good Operating Condition

AIR COMPRESSORS

2—Ingersoll-Sergeant Class A, 18 x 18½ x 24 Straight Line, steam driven, 650 ft. per minute.
1—16 x 10 x 10 Bury, belt driven, 2-stage, cap. 379 ft. at 100 lb. pressure.
1—Rand Duplex, steam driven, 600 ft. capacity with receiver.

BOILERS—Locomotive Type

6—50 H.P. 1—100 H.P. 1—80 H.P.

BOILERS—Vertical Tubular

2—12 H.P. 1—15 H.P. 4—40 H.P. R & S joints.

Economic

1—80 H.P. Erie City return-tubular Economic boiler on skids.

GENERATOR

1—Wood System, 60 KW., belt driven Generator, with exciter and instruments, with New York Safety Steam Power Co. engine.

DUMP CARS

45—4-yd. Western, extra heavy.
25—3-yd. Peteler, 36-in. gage.
20 pairs of wheels and axles, for 4-yd. Western, extra heavy, brand new.

CONCRETE MIXERS

2—Ransome, 1-yd. on skids, with steam engine, but no boiler.

CABLEWAY

1—Lambert, 6-ton, 900-ft. span.

HOISTING ENGINES

3—American, 7 x 10 double cyl., 2 drum, with boom swinger, but without boiler.
2—5½ x 8, double cyl., 2 drum, with boom swinger, with boiler.

ROAD ROLLER

1—10-ton, 3-wheeled, Iroquois Steam.

LOCOMOTIVES, DRILLS, PUMPS, STEAM SHOVELS, ETC.

All thoroughly overhauled and ready for immediate and constant service.

United States Equipment Company, 208 South La Salle Street, Chicago

---

FOR SALE

AIR COMPRESSOR

Corliss Type

size 18 x 32 x 30 x 18 x 36. Manufactured by Laidlaw-Dunn-Gordon Company. Now in operation and in excellent condition.

Address:

THE PINE BLUFF COMPANY
Pine Bluff, Ark.

Immediate Delivery—A Rare Bargain

ENGINE AND GENERATOR

One 17-in. x 24-in. Fitchburg Corliss non-condensing engine with 10-ft. fly wheel direct connected to Bullock 150-K.W. direct-current Generator, 1250 amperes, 116-120-volt, 150 R.P.M.

This outfit is in excellent condition and is complete with all parts for service. Volt meter, Ammeter, Rheostat, Circuit breaker, Cable, etc. Can be inspected set up and working. It has been maintained in fine shape and is as good as new.

Price is very reasonable as it is to be replaced by larger machine and must be moved quickly.

If interested wire for price.

HOISTING MACHINERY COMPANY, 50 Church Street, New York, N. Y.

STEAM ENGINES

1—40 H.P., upright Greenfield, in good condition.
1—80 H.P., slide valve, in good condition.

PFAFF & KENDALL
Ferry & Foundry Sts., Newark, N. J.

BOILERS

1—150 H.P. McEwan Return Tubular Boiler, 72 x 18, 125 lb. steam.
2—80 H.P. Hurley Return Tubular Boilers, 60 x 16, 100 lb. steam.

HARRY E. SALZBERG & CO.
30 Church St., New York

FOR SALE

BOILERS

L. G. EVERIST, INC.
Sioux City, Iowa

BARGAIN

Union 30-H.P., heavy duty, two cylinder, slightly used (25-H.P. on natural gas)

GAS ENGINES

2—F.O.B. Kansas City, each . . . $900
1—F.O.B. Fort Worth 900

Price new, each $1900.

Immediate Delivery

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San Francisco, Cal.

FOR SALE

AIR COMPRESSOR

Sullivan Class WJ3, Angle Compound, 18 x 11 x 14, Belt Driven, Capacity 886 cu. ft.; with Air Receiver; New, Fall 1915.

JAMES STEWART & CO., INC., Contractors
30 Church Street, New York City

FOR SALE OR RENT

2 Osgood 18-½ yd.

Steam Shovels

in first-class shape, can furnish operators

GENERAL CONTRACTING CO.
701 Amer. Trust Bldg., Cleveland, O.

AIR COMPRESSOR

Belted 375 c.f.m., 100 lb. Pressure, Ingersoll 2-stage air, size 16 x 10 x 10 in., Class J., excellent condition.

Immediate delivery.

A. G. SCHOONMAKER & SONS
25 Church St., New York, N. Y.

BOILERS

75 H.P. Scotch, 130 lb. pressure, dry back, corrugated furnace, 60 ft. stack, injector, all complete, on cars, immediate shipment, 150 H.P. return tubular, 100 lb. pressure, Hartford certificate, on cars, immediate shipment.

HACKLEY MORRISON, Richmond, Va.

SEARCHLIGHT SECTION

Second Hand Equipment

POWER MACHINERY

ALTERNATING CURRENT MOTORS IN STOCK

60 CYCLE

No.	H.P.	Manufacturer	Type or Form	Phase	Voltage	Speed
1	300	Allis-Chalmers	ANY	3	2200	514
1	300	Westinghouse	C	2	2000	495
1	225	Crocker-Wheeler (Slip Ring)		3	2200	450
1	200	Westinghouse (2 Bearing)	C	2	2000	570
2	200	Westinghouse (New) (Slip Ring)	CW	3	2200	600
1	200	General Electric(Slip Ring)	M	3	2200	600
1	200	Allis-Chalmers (Synchronous) (2 Bearing)		2	2200	900
1	150	Westinghouse (3 Bearing)	CCL	3	440	580
1	150	General Electric	K	3	440	720
1	150	General Electric	K	3	2200	720
3	125	Allis-Chalmers (Slip Ring) Variable Speed	ANY	3	2080	350-495
1	85	General Electric	L	3	440	720
1	75	Burke	Squir. Cge.	2	220	360
1	75	General Electric	L	3	440	514
1	75	Westinghouse	CCL	3	220	850
1	75	Westinghouse	CCL	3	440	855
1	75	Allis-Chalmers (New)	AN	3	440	900
1	75	Westinghouse (Slip Ring)	HF	3	550	1200
2	50	Westinghouse	CCL	3	440	850
6	50	Allis-Chalmers (New) (Slip Ring)	ANY	3	440	900
1	50	General Electric (Slip Ring)	M	2	220	900
1	50	General Electric (Slip Ring)	M	3	440	900
1	50	Fairbanks-Morse	B	3	220	900
1	40	Westinghouse	CCL	3	220	840
1	40	Westinghouse	CCL	3	400	840
1	40	Westinghouse	Squir. Cge.	2	400	850
1	40	General Electric (New)	K	3	440	900
1	40	Allis-Chalmers (New)	AN	3	220	1200
1	35	Westinghouse	CCL	2	220	900
2	35	General Electric	K	2	220	900
1	35	General Electric	KT-B	3	440	900
1	35	General Electric	K	3	220	1150
1	30	Westinghouse	CCL	3	220	840
1	30	Allis-Chalmers	AN	3	220	860
4	30	Allis-Chalmers	Squir. Cge.	3	550	860
1	30	Allis-Chalmers (New) (Slip Ring)	ANY	3	440	865
1	30	General Electric	Squir. Cge.	2	220	900
1	30	General Electric	L	3	220	900
1	30	Bullock	Squir. Cge.	3	550	900
1	30	Westinghouse	CCL	3	220	1120
1	30	Westinghouse	C	2	400	1120
1	30	Allis-Chalmers	AN	3	220	1150
1	30	Allis-Chalmers (Slip Ring)	ANY	3	220	1160
2	30	Allis-Chalmers (New)	AN	3	220	1200
1	30	Allis-Chalmers (Slip Ring)	ANY	3	550	1160
1	30	Westinghouse	CCL	3	220	1200
1	30	Fairbanks-Morse	B	3	220	1200
1	30	Allis-Chalmers	AN	3	220	1150
1	30	Allis-Chalmers (Slip Ring)	ANY	3	550	1160
2	30	Allis-Chalmers (New)	AN	3	220	1200
1	30	Wagner	HF	2	220	850
14	25	Allis-Chalmers	Squir. Cge.	3	550	860
1	20	Wagner	HW	2	220	900
3	20	Westinghouse	C	2	440	1120
2	20	Allis-Chalmers	AN	3	220	1130
1	20	Wagner	BW	2	220	1140
6	20	Fairbanks-Morse	KBV	3	220	1140
2	20	General Electric	KT-B	3	440	1200
1	20	Lincoln	"H"	3	220	1200
1	20	General Electric	Squir. Cge.	2	220	1800
1	15	Crocker-Wheeler	Squir. Cge.	3	220	565
1	15	Allis-Chalmers	Squir. Cge.	3	440	680
1	15	Allis-Chalmers	Squir. Cge.	3	440	860
15	15	General Electric	KT-B	3	220	900
1	15	Allis-Chalmers (Slip Ring)	ANY	3	550	1160
1	15	Westinghouse	CCL	3	220	1200
1	10	General Electric	KT-B	3	220	900
1	10	Fort Wayne (Back Geared) (Slip Ring) (New)	MA	3	220	1200
1	10	General Electric	K	3	220	1200
2	10	Westinghouse	CCL	3	220	1200
1	10	Fairbanks-Morse	B	3	220	1200
1	10	Allis-Chalmers		3	220	1800
1	10	General Electric (Vertical)	C	3	440	1800
1	10	Fairbanks-Morse	B	3	220	1800
2	7½	Allis-Chalmers		2	220	1150
1	7½	General Electric	L	2	220	1200
3	7½	Westinghouse	CCL	3	200	1700
1	7½	Allis-Chalmers	Squir. Cge.	3	220	1730
1	7½	Western Electric	KT-180	3	220	1800
1	7½	Fort Wayne	KT-C	3	220	1800
1	7½	General Electric	KT-C	3	220	1800
1	7½	General Electric	KQ-C	2	220	1800
1	5	General Electric	KQ-C	2	220	1200
1	5	Fort Wayne	Squir. Cge.	3	110	1800
1	4½	Lincoln	Squir. Cge.	2	220	720
1	4	General Electric	K	3	220	900
1	3	Westinghouse	CS	3	550	1200

25 CYCLE

1	1250	General Electric	M	3	2080	365
2	450	Westinghouse	CCL	3	400	360
1	200	Westinghouse	CCL	3	2200	480
1	200	Westinghouse	C	3	440	480
1	150	Westinghouse	CCL	3	400	480
1	150	Allis-Chalmers	AN	3	440	490
1	75	General Electric (Slip Ring)	ITC-M	3	440	475
1	75	General Electric	ITC-5015	3	2200	500
1	75	Triumph	Squir. Cge.	3	440	720
2	50	General Electric	MI	3	440	500
1	50	Westinghouse	C	3	400	500
1	50	Allis-Chalmers	AN	3	440	1450
2	37	General Electric	ITC-M	3	440	750
1	35	Burke	Squir. Cge.	2	220	750
1	30	Allis-Chalmers	Squir. Cge.	3	440	480
1	30	Westinghouse	CCL	3	440	710
1	30	Allis-Chalmers	AN	3	440	720
1	30	Fairbanks-Morse	Squir. Cge.	3	440	1500
1	15	Allis-Chalmers	AN	3	440	720
2	10	Fort Wayne	C	3	220	1500
1	10	General Electric	MIC	3	110	1500
1	8	General Electric	A	2	220	375
2	7½	General Electric	K	3	440	750
10	5	Allis-Chalmers	AN	3	440	720
5	2	General Electric	KT-C	3	440	750
3	1	General Electric	KT-C	3	440	750
1	½	Fairbanks-Morse	B	3	440	1500

We have on hand all classes of Power Machinery

MACGOVERN & COMPANY, Inc.

114 LIBERTY STREET, NEW YORK, N. Y.

SEARCHLIGHT SECTION

Second Hand Equipment

FOR RENT OR FOR SALE

Floating Pile Driver

all in good condition. Practically new—now working on Delaware River.
Scow—65 ft. x 22 ft. 4 in. x 6 ft. 0 in.
Ways—46 ft. above deck and extending down 1 ft. below water.
Hammer—3800 lb.
Follower Block—1100 lb.
7 in. x 10 in. Engine and Boiler.

Will sell completely rigged ready for work. Condition guaranteed.

LOUIS J. SIELING
171 Madison Ave., New York City

CRUSHERS

FOR SALE

No. 9 Gates, Style "K"
No. 7½ Austin
No. 6 Gates, Style "D"
2—Symons, 36-in. Disc Crushers
1—Symons, 48-in. Disc Crushers

Immediate Shipment

WILLIS SHAW
239 Railway Exchange Building, Chicago

LAKEWOOD

CONCRETE MIXER

No. 28 (1-yd. mixed concrete) direct connected to vertical steam engine.

Condition equal to new.

BROWN & SITES CO.
30 Church St., New York, N. Y.

Buckeye and Parsons Ditching Machines

FOR SALE OR RENT

GENERAL EQUIPMENT COMPANY
30 Church Street, New York City

FOR SALE—IMMEDIATE DELIVERY

Two Dragline Excavators

With 75-ft. Booms, 2½-cu.yd. Page Buckets. Good as new. Have excavated only about 300,000 cu.yds. Work completed and can give immediate delivery. Machines can be inspected in northern Minnesota.

SECURITY DREDGING & CONSTRUCTION CO.
710 Sykes Block, Minneapolis, Minn.

FOR RENT—FOR SALE

Portable Boilers

Hoisters, Air Compressors, Concrete Mixers, Centrifugal Pumps, Diving Outfits, Rock Drills, Derricks, Pile Drivers and General Contractor's Equipment, both Steam and Electrically Driven.

MARVIN BRIGGS, Inc., 167 Sixth St.
Tel. South 5471 Brooklyn, N. Y.

FOR SALE

PUMP and ENGINE

1—5½ x 8-in. Deming single-acting, Triplex Pump, and 1—30 H.P. Otto Gasoline Engine.
Both used a short time and are in splendid condition.

M. I. EVINGER
514 Farnam Bldg., Omaha, Nebr.

12-INCH HYDRAULIC DREDGE

Fully equipped. Electric light plant, Pontoons, Pontoon pipe, shore pipe, rubber sleeves and bands, coal scow with mast and boom. Double drum, hand power with wire blocks and falls. Galley and sleeping quarters for eleven men. All in first-class condition, ready to go into commission.

A. R. Powley Dredging & Construction Co., Inc.
P. O. Box 65, Kingston, N. Y.

TRENCH MACHINES

FOR SALE

Buckeye Gasoline Trench Machine, cuts 15 and 18 in. wide, 5½ ft. deep, equipped with round traction wheels, shipped Sept., 1914, used one short job.

Buckeye Steam Trench Machine, with boiler and engine, cuts 11½ in. wide, 4½ ft. deep, equipped with round traction wheels.

Buckeye Stream Trench Machine, with boiler and engine, cuts 15 and 18 in. wide, 5½ ft. deep, equipped with round traction wheels.

MARINE METAL & SUPPLY CO.
167 South St., New York City.

STIRLING BOILERS

5—250 H.P. Stirling boilers, hand fired, in good condition with fittings, stacks and feed water heater, each having superheater and Parsons forced draught system.
1—10-ton Paxon Cupola, with air elevator blower and air pipe.
1—American Blower Co.'s heating system, comprising vertical engine, direct connected to 10 ft. fan and several thousand feet steam pipe coil.
1—Crane runway, one hundred ft. long, 20 and 30 in. girders, supported by 10 x 10 in. steel columns.

Wire—Phone—Write

Contractors' Machinery & Supply Co.
509-11 Wabash Bldg., Pittsburgh, Pa.

FOR SALE

Electric Deep Well Pumping Outfit

with or without 75-hp., 108-volt, Direct-Current Motor, 500 to 600 gallons capacity, centrifugal turbine pump, 9 stages, depth 175 to 225 feet below the surface, 1150 revolutions per minute. Largest diameter of pump 14½ in. All nickel steel shafting, cast steel flanges, galvanized wrought iron 9-in. pipe in 8-foot sections. Approximate weight, 16,000 pounds. American Well Works make. Practically new and first-class. Will be sold due to receding of water in Chicago territory at very reasonable price by

PETER SCHOENHOFEN BREWING COMPANY, Chicago, Illinois

Correspondence solicited.

TRIPLEX PUMP

11 x 14 Goulds double acting, triplex pump, brass fitted, used about three months, absolutely good as new; will be furnished with or without two 50 H.P. Nash vertical 3-cylinder gas engines.

HACKLEY MORRISON, Richmond, Va.

FOR SALE—TO RENT

DITCH EXCAVATOR

A No. 00 Austin, at Admiral, Md.

TRENCH EXCAVATING CORPORATION
Care of Benjamin Catchings, Washington, D. C.

FOR SALE

10-in. Morris Centrifugal PUMP, direct connected with engine. Complete.

6-in. Morris Centrifugal PUMP, direct connected with engine. Complete.

9-ft. Marsh-Capron MIXER, with gasoline engine. 25 H.P. **BOILER.**

MIAMI CONSTRUCTION CO., Sidney, Ohio

SEARCHLIGHT SECTION

Second Hand Equipment

DELIVERY — QUALITY — PRICE

Your choice of equipment will be based on these three factors. We wish to prove to you, as we have already proved to many, that we can give you entire satisfaction. Send today for our list of equipment giving description, location and prices. Here are a few of the items:

LOCOMOTIVES

Quantity	Make	Description
11	Porter	36 in. gauge, saddle tank locomotives, 10 x 16, built 1905-6, all overhauled and in good working order
1	Davenport	36 in. gauge, saddle tank locomotive, 11 x 16 all overhauled and in good working condition. Shop, No. 833, built 1908
2	Porter	Standard gauge, saddle tank locomotives, 12 x 16, built 1912, in first-class condition.
1	Vulcan	Standard gauge saddle tank locomotive, 12 x 16, new boiler 1913.

CARS

60	H. S. Kerbaugh	36 in. gauge, 4 c.y., 1-way dump cars, all overhauled
12	H. S. Kerbaugh	36 in. gauge, 1 c.y. concrete dump cars, with articulated truck, all steel, new
4	H. S. Kerbaugh	36 in. gauge, 1 c.y. concrete dump cars, with articulated truck, all steel, used
10	Oliver	Standard gauge, 6 cu.yd. dump cars
4	Continental	Standard gauge, 6 cu.yd. dump cars
4	H. S. Kerbaugh	Standard gauge, 8 cu.yd. dump cars
5	H. S. Kerbaugh	Standard gauge, 10 cu.yd. dump cars

TRACTION ENGINES AND ROAD CARS

2	Buffalo-Pitts.	Traction engines, 50 H.P., cyl. 7 x 10, built 1910 in good repair
1	Buffalo-Pitts.	Traction engine, 35 H.P., cyl. 6½ x 6½
6	Buffalo-Pitts.	20-ton Platform wagons, built 1910

DERRICKS

10		Guy derricks, masts 80 ft. to 92 ft., booms 80 ft. to 85 ft., square and octagon sticks, castings 18 in. and 20 in. with steel bull wheels without guy, hoisting or swinging lines
[5000 ft.		1¼ in. steel yacht guy in 100 ft. lengths, with sockets
4		Stiff leg, twin, traveling derricks, masts, 18 in. x 18 in. x 30 ft., booms 16 in. x 16 in. x 65 ft
3		Stiff leg, twin, traveling derricks, masts 18 in. x 18 in. x 30 ft., booms 16 in. x 16 in. x 55 ft.
		All above traveling derricks, 30 ft. gauge, mounted on 22 in. double flanged wheels, without engines or lines
50,000 ft.		¾ in. guy

ENGINES

1	Fairbanks	Gas engine, 8 H.P., vertical, mounted on wheels, with 2 fly wheels and 2 pulleys, with gasoline tank and water tank. Shop No. 9471, in good repair
1	Nagle	Stationary engine, 10 x 12, Shop No. 2676
1	Woodbury-Booth	Stationary engine, 8 x 14, 30 H.P., no number, complete, in good repair
1	Chandler-Taylor	Stationary engine, 11 x 15, 60 H.P., complete, Shop No. 5518
1	Russell	Stationary engine, automatic, 11 x 14, 65 H.P, complete, Shop No. 01273
2	Westinghouse	Stationary engines, automatic, 10 x 9, 65 H.P., Nos. 2688-89, complete in all parts, in strictly first-class repair
2	Lambert	Hoisting engines, 7 x 10 D.D., D.C. Skeleton, Shop Nos. 1990 and 2371
1	Rawson-Morrison	Hoisting engine, 8½ x 10, D.D. ,D.C., skeleton, built 1901, Shop No. 12744, link motion, reversing
2	Flory	Propelling engines, 8½ x 10, D.C., skeleton, Shop Nos. 4598 and 5477
1	Barber	18 H.P., D.C., gas engine, not complete
2	Flory	Hoisting engines, 50 H.P., No. 372, spec. compound geared, fitted with link motion D.C., S.D., 48 in. x 24 in., Shop Nos. 4524-5

ELECTRICAL PLANT AND EQUIPMENT

4	Ingersoll-Rand	Electric wagon rock drills, Nos. 14, 25, 26 and 27, operated by motors, 3-phase, 60-cycle, 220-volt
17	Ingersoll-Rand	5F electric pulsator rock drills, with pulsator, controller and tripods, 5 H.P. motors, 3-phase, 60-cycle, 220-volt
2	Buffalo	Triplex pumps, 5½ in. x 6 in., with Westinghouse 7½ H.P. motor, 3-phase, 60-cycle, 220-volt
1	Morris	Two-stage service pump, 6 in. suction, 4 in. discharge, direct connected to G. E. 25 H.P. motor No. 425982, type I-2-25-1500-K 220-volt, 25-cycle
1	Morris	Ditto, with motor No. 145983
1	Morris	Vertical 3 in. centrifugal pump, direct connected to G. E. vertical 5 H. P. motor No. 425965, type I-2-5-A-1500, f orm K, speed full load 1450 amps. 1.4, volts 2200, cycles 25
1	Morris	Ditto, with motor No. 425986
2	Flory	Cableway engines, with 300 H.P. motors, 3-phase, 60-cycle, 440-volts, with carriage, fall block, head tower sheaves, fall rope carriers, top tower castings, but without hoisting or hauling lines.
6	Flory	75 H.P. electric hoists, 2-drum, with 11 H.P electric swinging winches, motors 3-phase, 60 cycle, 220-volt
2	Williamson	75 H.P. electric hoists, 2-drum, with 7½ H.P. electric swinging winches, motors 3-phase, 60-cycle, 220 volt
5	Maine Elec. Co.	75 H.P. electric hoists, 2-drum, with 7½ H.P. electric swinging winches, motors 3-phase, 60-cycle, 220 volt

Other Electrical Equipment on List

FLOATING EQUIPMENT

1—Dipper dredge "Pontiac" hull, 95 x 36 ft., boom 45 ft., dipper stick 46-ft., dipper, 4½ cu.yd. Complete and in first-class condition.

1—Derrick boat "Atlas" hull, 180 x 36 ft. 2A frame derricks, booms 84 and 75 ft., 25 ton capacity each. Complete and in first-class condition.

1—Tug boat "Susquehanna," hull 58 x 14 ft., 4 in.

LOCOMOTIVE CRANES

1—10-ton Industrial, 8 wheel locomotive crane, 40 ft. boom, equipped for bucket work.

SUPPLIES

"Large stock of new, miscellaneous supplies and hardware."

THESE AND MANY OTHER ITEMS, INCLUDING STEAM SHOVELS, STEAM AND HORSE ROLLERS, AIR COMPRESSORS AND RECEIVERS, CAGES AND MINE COLUMNS, DRILLS OF ALL KINDS, PUMPS, BOILERS, BUCKETS, CONCRETE MIXERS, CEMENT BAG SHAKER, STONE CRUSHER PLANT AND WAGONS ARE TO BE FOUND IN OUR LIST. SEND FOR IT TODAY.

Empire Engineering Company, Inc.

CONTRACTORS—ENGINEERS

Continuing the business carried on by

H. S. KERBAUGH, INC.

6 Church Street, New York City

SEARCHLIGHT SECTION

Second Hand Equipment

GOOD EQUIPMENT AND GOING FAST

LOCOMOTIVE CRANES

1—15-ton Industrial, 4-wheel, 40-ft. boom, 15-ft. extension.
1—20-ton Ohio, 8-wheel, 40-ft. boom.

DUMP CARS

29—Western, 12-yd. M. C. B.
30—K. & J. 16-yd. (all steel).
100—4-yd. 36-in. gauge, Western.
16—1½-yd. Western, 24-in. gauge.
40—1-1½-yd. Koppel, 24-in. gauge.
10—30-ton, 4-wheel, S. T.

LOCOMOTIVES

6—26-ton, 4-wheel, S. T. Vulcan.
2—21-ton, 4-wheel, S. T. Vulcan. (36-in. gauge)
5—10 x 16 Porters, S. T.
5—10 x 16 Vulcans, S. T.
1—11 x 16 Davenport, S. T.
2— 9 x 14 Vulcans, S. T.

STEAM SHOVELS

2—70C Bucyrus, like new, 2½-yd.
2—70-ton Bucyrus, fine, cheap.
2—Marion 75, 3½-yd. dipper.
1—Marion 41, RR, 1½-yd.
1—40C Bucyrus, RR, 1½-yd.
1—40 Marion, 1½-yd. traction.
1—18B Bucyrus, ⅞-yd. traction.
1—A-1 Thew, ⅞-yd. traction.
2—28 Marion, ¾-yd. traction.

MISCELLANEOUS

1—3-ton, 24-in. ga. Plymouth locomotive.
1—7 x 12 Davenport, 24-in. ga.
5000 ft. of 16- and 20-lb. track.
80 tons, 30-lb. relayers.
15 tons, 16-lb. relayers.
100 steel flat cars, 36-in. ga.
1—O & S C. S. bucket, 1-yd.
1—Hayward O. P. bucket, ¾-yd.
1—Traveling derrick
39—100 lb. of 25-lb. rail.

Will rent with privilege of purchase. *Send Us All Your Inquiries*

CONTRACTORS SERVICE COMPANY, 48 Church Street, N. Y. City, N. Y.

FOR SALE

1—Wilson-Snyder Compound **Steam Pump**, size 12 x 8 x 18 in.
1—Ingersoll-Rand **Air Compressor**, Class A-1 Steam Cyl., 12 x 12 in. Air Cyl., 14¼ x 14 in.
1—Deane Triplex **Pump**, 7½ x 10, 6-in. Suction, 5-in. Discharge, for 225 lb. working pressure.
1—3000 lb. Pioneer **Steam Roller**.
1—Ingersoll-Rand **Drill** No. 1.
6—Arthur Cable **Dump Cars**.
2—¾-yd. Side **Dump Buckets**.
1—**Keystone Drill** No. 2-A.
1—45 H.P. **Nagle Boiler**, Horizontal.
1—No. 4 Carpenter **Feed Pump**.

JOHNSTOWN WATER CO.
332 Locust St., Johnstown, Pa.

SPECIAL

Air Compressor

Ingersoll-Rand, Class NE-1, 10 x 10 in., 179 cu.ft. per minute, with A.C. Motor, 60-cycle 3-phase, 220 volts.

Electric Hoist

Lidgerwood, size No. 528, 22 H.P., double drum; Motor 60-cycle, 3-phase, 220 volts, with winch heads and foot brakes.

Above units in first-class condition. Prompt, delivery

E. C. SHERWOOD
50 Church St., New York, N. Y.

---

5 to 50 Ton

STEEL DERRICKS

Of All Types

Brand New—Quick Delivery—Exceptionally Fine Design—All Cast Steel Fittings—Equipped either for Hoisting or Bucket Use.

Phone, Wire, Write

KERN-HUNTER, INC.
208-210 Wells St., Milwaukee, Wis.

FOR SALE

For immediate delivery

1—Epping-Carpenter 16 x 10 x 24 Horizontal Duplex, heavy pressure boiler feed

PUMP

Never been used on account of changed conditions.

The Lorain County Electric Co.
Elyria, O.

TRAVELING CRANES

5-ton **Case**, 47-ft. span, 3 motor, 220 V., D.C.
10-ton **Shaw**, 65-ft. span, 3 motor, 220 V., D.C.
15-ton **Shaw**, 55-ft. span, 4 motor, 220 V., D.C.
Auxiliary Hoist, 3½ ton.

A. G. SCHOONMAKER & SONS
25 Church St., New York, N. Y.

PIPE AND WIRE ROPE FOR SALE

6000 ft. 4 in.; 15,000 ft. 2, 2½ and 3 in. galvanized iron pipe, 60 tons Bell and Spigot cast iron Water Pipe, 4 in. and 6 in., with hydrants, valves etc.; three 66 x 43 ft. 6 in. round closed tanks, for pressures or storage; 10,000 ft. ¼ and 1 inch NEW Galvanized Wire Rope; ½, ¾, 1¼, 1½, 1¾, 2 and 2½ in. Wire Rope, on reels, for guys, skidding cables or hoisting, lengths from 250 ft. to 8000 ft.; fine condition; four 8 in. Automatic Steam Valves, and lot 8 in. bent wrought pipe.

Easton Machinery Co., Drake Bldg., Easton, Pa.

HOIST

1—Lambert, 500 lb. capacity at 300 ft. per min., single line, single drum, 30 x 36 in., face smooth; geared to 68 H.P., 250 or 500 volt, D.C. Motor with controller practically new. Used 3 months.

ENGINES

1—12 x 36 in. Hamilton-Corliss
1—16 x 36 St. Louis Corliss
1—22 x 48 St. Louis Corliss
2—22 & 44 x 48 Hamilton C. C.

BOILERS

72 in. x 22 ft., 125 lb. 2—72 in. x 18 ft., 125 lb.
72 in. x 16 ft., 140 lb. 2—68 in. x 16 ft., 115 lb.
52 in. x 14 ft., 125 lb. 4—360 H.P., Heine type, 165 lb.

Motors, Generators, Units, all sizes.

HAROLD R. WILSON MACHINERY CO.
417 Pine St., St. Louis, Mo.

FOR SALE

CABLE

⅜- and ½-inch, various lengths, in first-class condition.

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Send for complete list with prices. Used instruments bought, sold, rented and exchanged for new.

THE ENGINEERING AGENCY, Inc.
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Little "WANT" cards bring big results in Engineering News-Record

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AIR COMPRESSORS—100 lb.

2000 cu.ft. Ingersoll-Corliss, steam, 2 stage air.
1050 cu.ft. Chicago Pneumatic, 2 stage, duplex, steam, 2.
707 cu.ft. Norwalk, double tandem, steam.
526 cu.ft. Ingersoll-Rand, 2 stage, duplex, steam, 2.
375 cu.ft. Ingersoll, 2 stage, belt driven.
180 cu.ft. Ingersoll-Rand, N. c. 1 belted.
180 cu.ft. Blaisdell, enclosed frame, belted.

A. G. SCHOONMAKER & SONS
25 Church St., New York, N. Y.

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999 New & Used

Surveying & Scientific Instruments
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Second-Hand Transits and Levels

Guaranteed in Good Order and Adjustment.
Send for New Bargain List.

WILLIAMS, BROWN & EARLE, INC.
918 Chestnut St., Philadelphia, Pa.
Department D

SEARCHLIGHT SECTION

Second Hand Equipment

We Equip Plants in Whole or in Part on Rental or Sales Basis

In addition to the following, all of which is ready for use and immediate shipment, we have a large amount of equipment now under repair or shortly to be released from rental.

Locomotive Cranes

1—35-ton, type "J" McMyler, 70-ft. boom, 8-wheel, double drum, four months old.
1—25-ton, 8-wheel McMyler, 50-70-ft. boom, double drum, new.
1—15-ton, 8-wheel Brown Hoist, 50-ft. boom, double drum, first-class condition.

Steam Shovels

1—Marion 91, 4-yd. dipper.
2—Bucyrus 70-C, 2½-yd. dipper.
1—Marion 70, 2½-yd. dipper.
2—Marion 60, 2½-yd. dipper.
1—Type "B" Erie Revolving, ¾-yd. dipper.
1—Marion 28 Revolving, ¾-yd. dipper.

Locomotives

1—40-ton O-4-2 type, standard gauge, saddle tank.
6—10 x 16 dinkeys, 36-in. gauge.
3— 9 x 14 dinkeys, 36-in. gauge.

Cars

60—12-yd. Western air dump, std. gauge.
125— 4-yd. Western steel beam, 36-in. gauge.
50— 4-yd. Western, wood beam, 36-in. gauge.
14— 4-yd. Continental, wood beam, 36-in. gauge.

Compressor

1—Ingersoll-Rand Class AA-2, steam driven, 879 cu.ft. capacity.

Hoists

1—3-drum, 7¼ x 10 Mundy with swinger, no boiler.
1—3-drum, 6¼ x 10 Mundy, Ohio boiler and swinger.
3—1-drum, 6¼ x 10 Mundy, skeleton.
1—1-drum, 6¼ x 10 Byers, skeleton.
1—2-drum, 8 x 12 Lambert, skeleton.
1—3-drum, 8¼ x 10 American, with boiler and swinger.
1—3-drum, 6¼ x 10 Lambert, with boiler.
1—3-drum, 10 x 12 Mead-Morrison with boiler.
1—2-drum, 9 x 10 Lidgerwood Cableway Engines.

Cableways

1—Lidgerwood Cableway, complete except towers and boiler, 9 x 10 engine, 1125 ft. span, 3 ton capacity.
2—Lengths 2½-in. Plow Steel, 6-37 Cable, each 2250 ft. long.

Clam Shell Buckets

2—1 -yd. Owen, with teeth.
5— ½-yd. Owen, with teeth.
2—1½-yd. Owen, with teeth.
1—1 -yd. Blaw.

Derricks

3—Traveling stiff-leg, 10 x 12 x 40-ft. boom, 12 x 12 x 15-ft. mast, 8-ft. bull wheel, 14-ft. gauge.
1—Stiff-leg, 12 x 12 x 55-ft. boom, 14 x 14 x 30-ft. mast, 8-ft. wheel.
1—Stiff-leg, 12 x 14 x 65-ft. boom, 14 x 14 x 40-ft. mast, 14-ft. wheel.
1—Guy, 14 x 14 x 57-ft. boom, 14 x 14 x 58-ft. mast.
1—Stiff-leg, steel boom, 80 ft., 16 x 16 x 50-ft. mast, legs 12 x 12 x 14-ft. bull wheel.
1—Guy, 12 x 12 x 60-ft. boom, 12 x 12 x 60-ft. mast, 13-ft. wheel.
1—Stiff-leg, 14 x 14 x 70-ft. boom, 16 x 16 x 40-ft. mast, legs 12 x 12, 14-ft. wheel.
1—Guy, 12 x 12 x 75-ft. boom, 14 x 14 x 76-ft. mast, 14-ft. wheel.

Boilers

6—Erie City Vertical, 15 H.P.
1— 30 H.P. Nagle, locomotive type, portable.
3— 15 H.P. O & S Vertical.
1— 20 H.P. Nagle, vertical, Ohio std.
2— 35 H.P. O & S Horizontal, locomotive type, portable.
1— 15 H.P. Gem City, vertical.
1— 8 H.P. Erie, vertical.
1—100 H.P. Nagle, locomotive type.

Concrete Towers

2—105-ft. Lakewood, complete with ½-yd. receiving and discharge hoppers.
150 ft. Lakewood Chute.
1—140-ft. Insley Tower, complete with 18-ft. hoist and 30-ft. hopper.
240 ft. 10-in. Chute.

Concrete Buckets bottom dump

5—27½-ft. Lakewood Eclipse.
2—21 -ft. Lakewood Eclipse.
4—39 -ft. Steubner, pin controlled.
3—32 -ft. Steubner, pin controlled.
4—30 -ft. Insley.

Road Rollers and Traction Engine

1— 8-ton Buffalo-Pitts Tandem Roller.
1—10-ton Monarch, 3-wheel Roller.
1—10-ton Buffalo-Pitts Traction Engine.

Pumps

2—No. 8 Swaby Centrifugal, 10-in. suction, 8-in. discharge, direct connected to engine.
3—No. 2 Emerson. 1—No. 5 Emerson.
3—Emerson, Jr. 1—No. 4 Emerson.

Union Arcade, Pittsburgh, Pa.

H KLEINHANS CO.

SEARCHLIGHT SECTION

Second Hand Equipment

FOR SALE

1—**Mack Truck,** 5-ton stripped body.

1—**Saurer Truck,** 6-ton stone side dump body flange wheels for 4 ft. 8½ gauge.

4000 lin. ft. ¾-in. square "Slick" **Deformed Bars,** P.S.C., O.K., reinforced steel, 26 ft. 4 in., 7 ft. 2 in. and 7 ft. 4 in. lengths.

I Beams

20-in. I Beams, 20 in. x 28 ft. x 65 lb.—1820 lb. 6 in. flange, ½-in. web.
15-in. I, 15 in. x 23 ft. x 42 lb.—966 lb. 5-in. flange, ⅞-in. web.
24-in. I, 24-in. x 17 ft. x 80 lb.—1306 lb. 7-in. flange, ⅞-in. web.

4600 lin. ft. **Track, 25-lb. Rail, Two Turnouts,** complete.

4—**Koppel Cars,** 24-in. gauge, 1¼-yd. water measure.

1—**Maxwell Car,** touring body, five passenger, first-class condition, 1916.

5000 lin. ft. of No. 14, double stranded waterproofed **Copper Wire,** with sockets, every 25 to 50 ft.

4—Standard gauge, 8 x 12 ft. skeleton frame **Rail Cars,** 10 ton capacity.

1500 lin. ft. ¼-in. **Wire Cable.**

1—Corrugated **Steel Oil House,** 4 x 8 x 6 ft.

4—Ground throw **Hand Levers.**

1—12 x 12 in. x 25 ft. **Yellow Pine Boom** for Derrick.

Anyone wishing to get in touch with us regarding the above can do so by either calling up our Field Office at Beach and Varick Sts. (telephone Franklin 3413) or the Main Office at 220 Broadway, New York, N. Y. (telephone Cortlandt 1884).

ENGEL & HEVENOR

IMMEDIATE SHIPMENT

HOISTING ENGINES

1— 6 x 8-in. D.C., single drum skeleton.
2— 6 x 8-in. D.C., D.D., with boilers and swingers.
3—6½ x 10-in. D.C., D.D. with boilers, and swingers.
4—7¼ x 10-in. D.C., D.D., with boilers
4—8¼ x 10-in. D.C., D.D., with boilers.
2—8¼ x 10-in. D.C., triple drum with boilers.
1—8¼ x 10-in. D.C., triple drum skeleton.
1—10 x 12-in. D.C., triple drum, with boiler.
1—10 x 12-in. D.C., D.D., with boiler.
1—10 x 12-in. D.C., single drum with boiler.
2—45 H.P., double drum Maine Electric, with swinging gear.

BOILERS

2—100 H.P. Penn. return tubular.
2— 70 H.P. Locomotive type, on wheels.
1— 50 H.P. Locomotive type, on wheels.

DERRICKS

2—Travelers, mast 14 x 14-in. x 35-ft. boom 12 x 12 in. x 65 ft.
1—Traveler, mast 14 x 14 in. x 25 ft. boom 12 x 12 in. x 40 ft.
1—Traveler, mast 10 x 10 in. x 20 ft. boom 10 x 10 in. x 30 ft.
1—Stiff leg, 75-ft. boom, 42-ft. mast.
2—Stiff leg, 50-ft. boom, 35-ft. mast.
2—Stiff leg, 60-ft. boom, 40-ft. mast.
1—Stiff leg, 40-ft. boom, 30-ft. mast.
3—Guy, 60-ft. masts, 60-ft. boom, timbers 14 x 14.

COMPRESSORS

1—McKiernan straight line, 20 x 20 x 24 in.
1—McKiernan straight line, 16 x 16 x 18 in.

GRAB BUCKETS

2—Williams, 1-yd., single line.
2—Hayward, ¾ yd.
2—Hayward, 1 yd.
3—Hayward, 1½ yd.

STANDARD GAGE CARS

25—50,000 lb. capacity Flat Cars.

LOCOMOTIVES

1—35-ton, 4-wheel separate tender Switching Locomotive.
1—35-ton, 4-wheel Saddle Tank Locomotive.

LOCOMOTIVE CRANES

1—Interstate, 20-ton, 52-ft. boom, 8-wheel, arranged for clamshell.
1—American Hoist & Derrick, 20-ton
1—Williamson, 5-ton.
1—Brown Hoist, 5-ton.
1—Link-Belt, 10-ft. gage, 4-wheel electric, 58-ft. boom.

HOISTING MACHINERY CO., 50 Church Street, New York City

VULCAN HAMMERS

1 No. 2—1 No. 3

HOISTING ENGINES

2—7x10 DD., D.C., with boilers

ELECTRIC HOIST

1—100 H.P. Thomas Elevator

GRANVILLE SUPPLY COMPANY
915 Olive St., St. Louis, Mo.

Locomotive Cranes
Steel Derricks
Hoisting Engines
Wire Rope

WIRE—PHONE—WRITE

T. H. LETSON COMPANY
50 Church St., New York, N. Y.

HOISTING and SWINGING ENGINES

1—Lidgerwood, 14 x 18 ft., D.C., 3-tandem drums, suitable for cable way.
1—Shannon, 7¼ x 10, D.C., D.D., with boiler.
1—Mundy, 6¼ x 10, D.C., D.D. Skeleton.
2—Mundy, 6¼ x 10, D.C., D.D., with boiler.
1—National, 5½ x 10, D.C., D.D., with boiler.
1—Lidgerwood rotary swinging engine.
1—Mundy, 4½ x 6, swinging engine.

STEAM SHOVELS

1—65-ton Bucyrus, 2½-yd. dipper.
1—No. 1 Thew Traction, ⅞-yd. dipper.

HENRY A. HITNER'S SONS CO.
Station K, Philadelphia, Pa.

HOISTS

Compressors - Boilers - Mixers
Derricks - Cableways

For Sale or Lease

HOISTING ENGINE SALES CO.
Grand Central Station, New York

LOCOMOTIVE CRANE

1—20-ton, 8-wheel McMyler-Interstate, M.C.B. trucks, 50-ft. boom, immediate delivery.

Other Cranes, 5 to 30 tons capacity.

ROCK CRUSHER

1—No. 5 McCully Gyratory.

Also other Equipment. Advise us as to your requirem ents.

HERBERT GIVIN COMPANY
30 Church Street, New York, N. Y.

STEAM HOISTS

8 x 10-in. single cylinder, single drum, skeleton
7 x 10-in. double cylinder, D.D., Carlin skeleton
6½ x 10-in. double cylinder, D.D., Mundy skeleton
5 x 8-in. double cylinder, D.D., Carlin, with boiler

ELECTRIC HOISTS

40 H.P., A.C. single drum Mundy, in stock, drum 18 in. dia., 30 in. long with swinging drum
20 H.P. A.C., double friction drum, 14 x 20 in.
25 H.P., single friction drum
Single or double drum Electric Hoists for motors, rope pull capacities 9000, 8000, 5000 and 2000 lb.

JOHN H. CARLIN MACHINE CO.
Sandusky-Lacock Sts., Pittsburgh, Pa.

SEARCHLIGHT SECTION

Second Hand Equipment

MOBILIZATION

Of Large Plant for Immediate Service

The contractor's greatest difficulty and most important factor today is to get first-class plant, in perfect working condition, ready for use and immediately available. Here the difficulty is solved. We have assembled one of the finest and most complete plants in the country. Everything is here for industrial plants, railroad construction, municipal, state or federal work of any kind.

LOOK AT THE LIST AND PREPARE FOR A BIG OFFENSIVE

First Line Equipment:—

For heavy excavation and concrete work. A rare opportunity for Industrial Plants, Contractors, Railroads, Municipal, State or Federal Departments, requiring A-1 complete equipment, ready for immediate shipment, and in absolutely first-class working condition for immediate service. All the plant listed below at Delaware, Ohio, on the Pennsylvania Railroad.

STEAM SHOVELS:—

2—70-C Bucyrus, equipped with air pump and lighting plant.
2—Model 60 Marions. Complete list shovel repair parts, including 2¼-yd. manganese dipper for Marion 60.

CARS—Dump:—

55—4 -yd. heavy duty Westerns.
18—4 -yd. standard Westerns.
12—2 -yd. standard Westerns.
4—1½-yd. V-shaped Koppel.
2—1 -yd. K. & J.
4—30-ton rail trucks.
5—Small rail and push cars. Complete list repair parts.

LOCOMOTIVES:—

7—10 x 16 Vulcans, 36-in. gage.
2—10 x 16 Porters, 36-in. gage.
1—11 x 16 Porter, 36-in. gage.
1— 7 x 12 Vulcan, 9-ton, 24-in. gage, steel cab. Complete list repair parts.
Given 225 lb. hydrostatic test under I.C.C. inspector supervision.

CONCRETE:—

3—¾-yd. steam Koehring traction, mixer, side loaders, Ohio standard boilers.
1—¾-yd. Marsh-Capron as above.
1—¾ steam Ransome on wheels.

TOWERS:—

2—Insleys with chutes, complete.

HOISTING ENGINES:—

1—6 x 8-in. Byers, D.D., with Boiler.
1—6 x 8-in. O. & S., D.D., with Boiler.
1—8 x 10-in. Flory 3-D, with Boiler.
1—No. 4 Mead-Morrison Swinger.

BOILERS:—

2—30 H.P. Vertical, Ohio & Mass. Standard.
1—25 H.P. Horizontal portable.
1—18 H.P. Vertical.
1—12 H.P. Vertical.

DERRICKS:—

1—Stiff Leg.
6—Guy Derricks, with bull wheels, Guy wire, hoisting rope, derrick fittings.

DRILLS—Steam:—

2—U. S.-3 Sullivan with tripods.
9—U. F.-11 Sullivan with tripods.

PUMPS:—

2—Blake, 4½, 2¾ x 4.
2—Crawford-McCrimmon, size 4½.
1—Cameron 3-B, 6 x 4 x 7.
1—Advance duplex, 7 x 4½ x 8.
1—Gasoline-driven, 3-in. centrifugal.
2—Gould gasoline driven, 2-in. suction.
1—Gould hand feed pump.
1—Worthington, 6 x 4 x 6.

CLAM SHELL BUCKETS:—

1—½-yd. type C Williams.
2—½-yd. Owens, one with teeth.
1—½-yd. Haas with teeth.

DUMP BUCKETS:—

1— ½-yd. Lakewood, controllable bottom.
3—1 -yd. round Sherwood dumps.
2—1 -yd. flaring side self dumps.
4—1 -yd. cyclopean, double hinge bottom.
1—1½-yd. square dump.

AUTO TRUCKS:—

1—5-ton White, 6-cylinder dump body, Model A.T.C., at White shops, Cleveland.
1—½-ton Ford delivery.

AIR RECEIVER:—

6 ft. 6 in. x 4 ft. 6 in., 100 cu.ft. capacity.

WIRE ROPE:—

Galvanized Guy. Hoisting, 1½, 1, ⅞ in.
Manila ¾, ½ in.

LUMBER—Used:—

167,000 F. B. M.
15,000—6 x 6 x 6 ties.

ROAD ROLLERS:—

1—5-ton tandem steam Buffalo-Pitts.
1—8-ton, 3-wheel American gasoline.

Rental proposition submitted on steam shovels, locomotives, derricks and concrete mixers.

UTILITY EQUIPMENT COMPANY

324 Fourth Avenue, Pittsburgh, Pa.

I BEAMS

Fine Condition	Prompt Delivery
10—12″ Beams	10 to 11′ 9″ Long
350—15″ Beams	17 to 19′ 8″ Long
150—20″ Beams	15 to 18′ Long

Variety of other beams on hand. Send us your specifications.

TANKS

1—Open, round tank, 15′ dia., 15′ high, ¼″ plate, practically new.
25—Steel pressure tanks, 3′6″ dia. x 9′6″ long, ¾″ plate.
10—6′ dia. x 20′.
10—6′ dia. x 17′.
Many others—open and closed.

PIPE

Large stock, all sizes of second-hand pipe, re-threaded and coupled for immediate delivery.

TUBES

Seamless (New)

5 tons, 2¼″ x 7′1″
50 tons, 3¼″ x 7′1″

Lap Welded (Used)

150 tons 2¼″, 3″, 3¼″, 3½″ and 4″, 18 to 20 ft. long.

Prompt delivery.

Send us a list of your requirements.

The Perry, Buxton, Doane Co.
216 West 1st St., South Boston, Mass.

PIPE All sizes, bargain prices, second-hand and new

IMMEDIATE DELIVERIES:

8,000 ft. of 12 in. pipe	50,000 ft. of 2 in. pipe
10,000 ft. of 8 in. pipe	50,000 ft. of 1½ in. pipe
10,000 ft. of 6 in. pipe	100,000 ft. of 1¼ in. pipe
10,000 ft. of 4 in. pipe	100,000 ft. of 1 in. pipe
15,000 ft. of 3 in. pipe	

Also a large stock of 16, 18 and 20 in. pipe

PIPE & CONTRACTORS SUPPLY CO., 4 Dover Street, New York, N. Y.

WE BUY AND SELL

PIPE—RAILS —FLUES

We offer for prompt delivery

5 miles 4-in. new line pipe
5 miles 3-in. new line pipe
5 miles 3 in. used line pipe

KEYSTONE PIPE & SUPPLY COMPANY
Butler, Pa.

Wrought Pipe

New and Second-Hand

GUARANTEED

Large Stock All Sizes
Special Low Prices

Eagle Pipe Supply Co., Inc.
30 Church St., New York City
INQUIRIES SOLICITED

WATER PIPE

100 tons of used 12 in. cast iron water pipe

THE PERRY, BUXTON, DOANE CO.
216 W. First St., So. Boston, Mass.

TUBING, ALL SIZES — P'PE CUT TO SKETCH

SECOND-HAND PIPE

Large stock, all sizes, furnished with new threads and couplings

JAMES F. GRIFFITH - 416-24 Moyer Street, Philadelphia, Pa.

SECOND-HAND PIPE

Large Stock—All Sizes

Recut—Perfect Threads and Couplings

Also a Large Stock
Contractors' Equipment

Marine Metal & Supply Co.
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5000 ft. 10 in.
5000 ft. 6 in.
5000 ft. 3½ in.
10000 ft. 2½ in.

Also large quantity of all sizes in stock. Prompt shipment.

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New and second-hand. With new threads and couplings. All sizes from ¼ to 12 in. Also cut to sketch.

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PIPE SECOND HAND

With new threads and couplings; also cut to sketch.

PFAFF & KENDALL
Ferry & Foundry Sts., Newark, N. J.

HIGHEST PRICES PAID FOR SECOND-HAND PIPE

CUTTING AND THREADING MACHINES

STERLING MACHINERY COMPANY
15 FRANKLIN STREET, NEW YORK CITY

SEARCHLIGHT SECTION

Second Hand Equipment

SPECIAL
LOCOMOTIVE CRANES
Cars, Locomotives, Steam Shovels, Etc.
For Practically Immediate Shipment

1—35-40-ton, 8-wheel truck, **Ohio Locomotive Crane**, 55-ft. boom. Strictly modern crane. Used only few months. Just like new. Immediate shipment.

1—30-ton, 8-Wheel Truck **McMyler Locomotive Crane**, 50-ft. Boom, etc. Strictly modern, used only about three months in actual service. Just good as new. Can ship at once.

1—15-ton, 8-Wheel Truck **Brown Hoist Locomotive Crane**, 36-ft. Boom, used only few months in actual service. Strictly modern. Just overhauled. First-class. Immediate shipment.

1—15-ton, 8-Wheel Truck **McMyler Locomotive Crane**, 40-ft. Boom, etc. Used very little, just like new. Right out of shops. Strictly A-1. Immediate shipment.

1—10-ton, 8-Wheel Truck **American Hoist & Derrick Company Locomotive Crane**, 38-ft. Boom. Little used. Just overhauled. A-1 machine. Prompt shipment.

1—15-ton, 8-Wheel Truck **Industrial Works Locomotive Crane**. Used very little. Just overhauled. Right out of shops. Immediate shipment.

1—42-ton Standard Gauge, 15 x 24 **Saddle Tank, 4 Driver Porter Switcher**. Strictly modern type. Little used. Right out of shops.

1—18-ton, 36-in. Gauge, 10 x 16 **Saddle Tank, 4 Driver Porter Switcher**. Little used. Just overhauled. Immediate shipment.

10—100,000 capacity **Steel Hopper Gondola Cars**. Just good as new. Little used. I.C.C. and M.C.B. equipment. Immediate shipment.

25—60,000 capacity **Flat Cars**, 36-ft. 10-in. long. Right out of shops. I.C.C. and M.C.B. equipment, etc. Prompt shipment.

30—60,000 capacity **Box Cars**, 34-ft. 6-in. long. I.C.C. and M.C.B. equipment. Coming right out of shops. Prompt shipments.

Marion, Thew and Bucyrus Steam Shovels, mounted on both **Traction Wheels**, also **Standard Gauge Trucks**. Different sizes. Prompt shipments. Very desirable purchases.

ALSO CONSIDERABLE OTHER EQUIPMENT.

ACT QUICKLY. ALL QUOTATIONS SUBJECT PRIOR SALE.

What Are Your Requirements? Please Telegraph, Telephone or Write Us.

A. C. TORBERT, Continental and Commercial Bank Bldg., CHICAGO

Shops and Storage Yards at Chicago

NEW

Industrial Locomotive Crane

20-ton, 8-wheel, M.C.B., double drums, 55-ft. boom, 1 yd. bucket. Prompt delivery. Last word in crane design.

Hoisting Engines, Derricks, Cars, Locomotives, Relaying Rail, Steam Shovels, etc.

Phone, wire or write

MARYLAND EQUIPMENT & SUPPLY CO.
Baltimore, Md.

FOR SALE

5-ton, 4-wheel Brown Hoist

Locomotive Crane

Standard gauge, 30-ft. boom, thoroughly overhauled, immediate delivery. Photo on request. Others, all makes, 15, 20-ton, etc. 4 and 8-wheel.

Lennox Rotary Bevel

Shear

cap. ¾ in., brand new. Philadelphia delivery.

DALLETT & CO.
1011-12 Harrison Bldg., Philadelphia, Pa.

LOCOMOTIVE CRANE

1—10-15-ton capacity crane built by Industrial Works, Bay City, Mich. Mounted on 8-wheel M. C. B. trucks, standard gage. Air brakes. Outriggers. 40-ft. boom. Equipped for bucket. First-class condition.

Immediate Shipment

Wire or Write for Price.

HE ISAAC JOSEPH IRON CO.
525 Reading Road, Cincinnati, O.

BROWN-HOIST LOCOMOTIVE CRANE

FOR SALE

5-ton, 4-wheel, Bucket Operating Machine, standard gauge outriggers, Massachusetts and Ohio boiler. The crane is brand new, and has never been used.

Immediate Delivery Can Be Made. No Inflated Price Asked.

SQUAW ISLAND SAND & GRAVEL CORP., Buffalo, N. Y.

TRAVELING CRANE
Specialist

5-T. 45-ft.; 20-T. 76 ft.; 5-T. 33-ft. 9-in.; 10 T. 72-ft.; 15-T. 55-ft. 8haw 3-motor, 220-v., d.-c.

Send requirements to

N. B. PAYNE, 25 Church Street, New York
Phone—Cortlandt 1866

SEARCHLIGHT SECTION

Second Hand Equipment

New Huber Steam Roller

10-ton, 3-wheel

8—1-yard, 4-wheel

Maney Scrapers

USED ONE SEASON

Jas. E. McNamara Construction Co.

Indianapolis, Ind.

Construction Equipment

HOISTING ENGINES

1—8½ x 10, 3-drum Flory with boiler
1—10 x 12, 3-drum Mead-Morrison skeleton
1—14 x 18 Lidgerwood, single drum, reversible haulage engine
1—7 x 10, 3-drum American Skeleton
2—7 x 10, single drum American Skeletons
1—7 x 10, double drum American, with Boiler
1—6½ x 10, double drum Lambert, with Boiler
1—6½ x 8, double drum Lidgerwood, with Boiler
Various other sizes and types

PILE HAMMERS

1—Each McKiernan-Terry No. 1, 2, 3, 6 and 7

MIXERS

1—No. 106 Smith Side Loader, Gasoline Engine
1—No. 9 Chicago Cube, Side Loader, Gasoline Engine

LOCOMOTIVES

1—13-ton, 24-in. gage Shay Geared Dinkey
1—9 x 14, 36-in. gage saddle tank Locomotive
1—10 x 16 American, 36-in. gauge Saddle Tank Locomotive

CARS and TRACKS

1500 ft. 24-in. Gauge Koppel Track
15—24-in. Gauge 1-yd. Cradle Cars

BOILERS

1—100 H.P. Water Front and open bottom firebox portable

DERRICKS

Large Stock Fittings with 75,000 ft. Oregon Fir Derrick Timber

REVOLVING CRANE

1—Revolving or Gantry Crane, 50-ft. boom with 20-ft. extension.

STATIONARY ENGINES

3—800 H.P. Green compound tandem, 38 x 18 x 4 condensing
1—500 H.P. Buckeye compound tandem, 18 x 32½ x 27

ELECTRIC GENERATORS

3—500 K.W. Westinghouse D.C. Generators, 550 volts
1—300 K.W. General Electric D.C. Generator, 550 volts

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Reliable Used Equipment

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Mundy 7 x 12, 3-drum and boiler.
Mundy 6½ x 8 D.D. and boiler.
American Hoist and Derrick, 8½ x 10, 3-drum boiler and swinger.

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20-ton Browning, 60-ft. boom, bucket, drums, 4 years old.
20-ton, 8 wheel Ohio, 40-ft. boom, bucket drums, 3 years old.

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Haines complete, 4 pans.
9-E Chain Belt Paver, steam engine boiler, and distributing chute.
7S Rex Chain Belt on trucks, with gasoline engines.

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18-ton saddle tank Baldwin, 36-in. gage.

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4-yd., 36-in. gage Easton cars.
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Stiff-leg derrick, complete, 40-ft. mast, 60-ft boom, bull-wheel, 7 x 10 Mundy hoisting engine, D.D. and boiler, separate swinging engine.
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Lidgerwood Cablewood, 400-ft. span, 8½ x 10 D.C. double tandem drum engine and boiler.
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direct-connected 11 x 10 double vertical engines; 12-in. suction and discharge.

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Steel Chutes **Pipe Covering**
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Continuous Bucket Elevator

30-ft. centers, buckets 30 x 13 x 18, shafting, pulley, gears, sprockets, driving chains, belts, complete.

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1—8-ton, 24-in. gage **Baldwin Locomotive.**

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Two 11 ft. Boss

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3,000 ft. 24-in. gauge, 20 lb.

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8—1½-yd. V shape

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250-in. sewer trench braces

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5—24-in., 105-lb., 32 ft. long

CONCRETE BUCKETS

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Electric Shovel, Air Compressors, Electric Locomotives, all auxiliaries.

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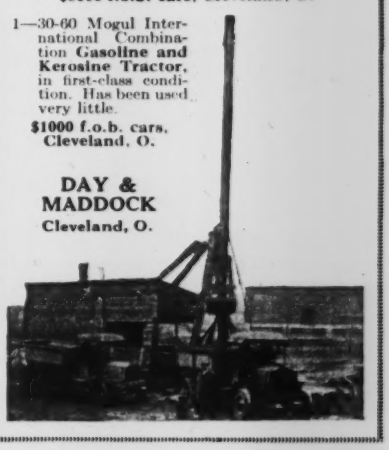

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Second Hand Equipment

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1 1917 Model "C" **Byers Auto-Crane**
1 7½ x 10 D.C., D.D. Mundy **Skeleton Hoist**
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1 6½ x 10 D.C., S.D. **Lidgerwood**, with **Boiler**
1 5½ x 7 D.C., D.D. **Byers Hoist**, with **Boiler**
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6 1-yd 24-in gauge **Koppel Scoop Cars**
2 36-in gauge **Flat Cars**
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1 10-ton **Iroquois Macadam Roller**
1 600 gal **Studebaker Sprinkler**
1 9 x 15 **Western Jaw Crusher**, on wheels
1 12-ton **Champion Portable Bin**, elevator and screen
1 Gallon **Scarifier**
1 ½-yd **Hayward O. P. Bucket**
2 1-yd **Ransome Controllable Buckets**
1 ½-yd **Contractors Tip-over Bucket**
1 ½-yd **Williams "Favorite" Clam Shell**
1 5-ft **Hayward O. P. Bucket**
2 1-yd **Mead Clam-Shell Buckets**
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Locomotives, Steam Shovels, Cars, Derricks, Pile Drivers, etc. Everything for the Contractor, new and second-hand.

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10 ft. on trucks with gasoline engine and barrow hopper.

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400 ft. span, complete with engine, boiler, towers and buckets.

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1 3-drum National, 9 x 12 with boiler and swinger.
3 10 x 12 double cylinder, double drum Lidgerwood skeleton.
2 7½ x 10 double cylinder, double drum Lidgerwood skeleton.
1 8½ x 10 double cylinder, double drum Lidgerwood, with swinger.
1 7½ x 10 double cylinder, double drum Lambert with boiler.

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1 22 ft. on skids with steam engines. Rebuilt and ready for any job. Location, Philadelphia.

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45 ton, 45 lb. No. 1 with joints.

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2 **Marion**, standard gage, 1½ yd. $4200
1½ yd. 5950
Orton & Steinbreiner, 2-yd. Clam Shell bucket (almost new) 600
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8 12-yd. steel lined **Western**, 2-way standard gage **Dump Cars**, air brake, each 1000
30 30-ton bottom dump **Gondola Cars**, standard gage, air brake, each 1200
1 10 x 16 **Porter Locomotive**, 36-in. gage 2500
1 17 x 24 **Baldwin Locomotive**, standard gage 5500

Steam and Electric Hoists, Cable, Rail, etc.
Write or Wire

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Thew ⅜ yd. Boiler, reflued. All new steel spur and bevel gears throughout. New shafts and bearings. Condition guaranteed identical with new.

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Rental on ½ and ¾ yd. Buckets $2.75 per day
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1—Marion Model 28

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12—36 cu ft. Steubner, bottom discharge.

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1 Direct-connected **Pump**, complete, 12-in. suction, for 25-ft. head.
1 ½-yd. Class "E" Hayward Clamshell **Bucket** new.

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All necessary equipment for complete plant.

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80 H.P. **Vertical** Erie City **Boiler**, 100 lb. pressure, 54 in. x 11 ft., **with all fittings complete.**
8½ in. x 10 ft. **Rawson-Morrison Skeleton Hoist**, D.C., D.D., **first-class condition.**
10 duplex **Steam Pumps**, various sizes.

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Marion Model 50, 2-yd. Dipper, located Toronto
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Both on standard gauge trucks.

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On the following equipment—Located in Greater New York, Bayonne and Newark, N. J.

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1—No. 10 Sturtevant high-pressure 12-in. outlet
1—No. 6 Sturtevant high-pressure
1—No. 7 Sturtevant exhauster
1—No. 8 Sturtevant exhauster
16-in. Blower pipe and fittings

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1—Air Receiver, 36 in. x 8 ft., with 2 [illegible] connections

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1—60 H.P. Lidgerwood, D.D. and swinger, 220 V., D.C.
1—40 H.P. Lambert, D.D. and swinger, 220 V., D.C.
1—40 H.P. Lambert, S.D., 800 ft. rope, 220 V., D.C.

Steam
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1—10 x 10 Lidgerwood Steam S. D. shaft hoist

DRILLS
8—1-9/4 Ingersoll-Rand, with tripods
2—C-116 Ingersoll-Rand
9—BCR-53 Ingersoll-Rand

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2—10 x 5 x 12 National plunger type
1—5 x 3 x 10 National plunger type
1—6 x 5½ x 7 Blake duplex, 5-in. suc., 4-in. dis.
1—Morris Mach. Wks. Centrifugal, 4-in. suc., 4-in. dis.
1—7½ x 7½ x 6 Worthington Duplex
1—6 x 7½ x 5 Worthington Duplex
3—4-in. Worthington [illegible] duplex, 4 stage, cap. 200 gal. per min., 400 ft. head, 2 connected to 50 H.P., 3 phase, 60 cycle, 1200 R.P.M., A.C. motors, 2 without motors, 4-in. suc., 3-in. dis.
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1—2-in. Worthington turbine, direct connected to 30 H.P., 3 phase, 60 cycle, A.C. motor
1—11-in. Worthington do. turbine (no motor)
1—4-in. Jeanesville, 20-stage, single-suc. turbine, cap. 540 gal., 800-ft. head (no motor)
1—Worthington duplex, 7" [illegible] x 10
4—Worthington duplex, 6 x 5½ x 6
1—Worthington duplex, 9 x 5½ x 10
4—Cameron, 6 x 6 x 7
3—Cameron No. 6-A, 4-in. suc., 4-in. dis.
1—Cameron No. 12
2—Cameron, 7 x 7 x 10, 4-in. suc., 3-in. dis.

SHOVEL
1—40-ton Model 20 Marion, std. gauge

SCRAPERS, ETC.
1—Ottawa road scraper
1—3-ton Enterprise farm roller

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2—Ransome 1-yd., No. 63 (arranged for motor con.)
1—Ransome 1-yd., No. 40, with 8 x 10 engine
1—Smith No. 5, 1-yd., with 8 x 10 engine

ENGINES
5—7 x 7 Vert. Otr. & Sembower (steam or air)
1—8 x 8 Vert. Otr. & Sembower (steam or air)
1—4 x 5 Vert. Otr. & Sembower (steam or air)

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12—12-in. flanged steam valves (new)
6—1 water and gas pipe
Reinforcing rods, etc.
2—36-in. x 39-ft. plate girders
54—30-in. Beth beams, 120 lb. x 48 ft.
64—30-in. Beth beams, 200 lb. x 48 ft.
40—24-in. Standard beams, 80 lb. x 24 ft.

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SECOND HAND

Wemlinger, 12 in. x ¼ in. and ⅜ in.

200 pcs. 4 ft. long	210 pcs. 12 ft. long
70 pcs. 6 ft. long	80 pcs. 13 ft. long
150 pcs. 8 ft. long	350 pcs. 20 ft. long
340 pcs. 10 ft. long	200 pcs. 24 ft. long

United States, 6 in. and 9 in. x ¼ in.

56 pcs. 10 ft. long	New	64 pcs. 20 ft. long
35 pcs. 11 ft. long		38 pcs. 21 ft. long
160 pcs. 12 ft. long		100 pcs. 22 ft. long
50 pcs. 13 ft. long		50 pcs. 25 ft. long

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125 pcs. 14 ft. long	180 pcs. 20 ft. long
160 pcs. 17 ft. long	75 pcs. 24 ft. long
220 pcs. 18 ft. long	80 pcs. 25 ft. long

Lackawanna, 7 in. x ¼ in.

380 pcs. 14 ft. long	78 pcs. 22 ft. long

Lackawanna, 12¼ in. and 14 in. x ¼ in.

180 pcs. 12 ft. long	80 pcs. 24 ft. long
100 pcs. 16 ft. long	200 pcs. 30 ft. long
125 pcs. 18 ft. long	125 pcs. 35 ft. long
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We are always in the market for second-hand piling.

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"The Steel Piling Exchange"

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7—Vulcan, 36-in. gage

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7—7-yd. standard gage
100—4-yd. Western, 36-in. gage
20—1¼-yd., 24-in. and 36-in. gage

Steam Shovels

3—Bucyrus, 70-C
3—Bucyrus, 70
1—Bucyrus, 60-C
1—Atlantic, 45
3—Marion, 60
2—Marion, 20
1—Lidgerwood Drag Line, 70-ft. boom

Standard gage spreader car, 3½-ton and 5-ton motor trucks, steam rollers, dump wagons, steel bridges, cable-ways, channelling machines, hoisting engines, concrete mixers, crushers, Insley tower, washing plant, buckets, conveyors, screens elevators, boilers, pumps, derricks, steam drills, stationary engines, and sundry other plant.

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2—70-C Bucyrus.
1—Model 60 Marion.
2—No. 0 Thew Revolving.
1—Keystone Excavator.

LOCOMOTIVES
2—20 ton standard gage S. T. Americans.
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24—4-yd., 36-in. gage, 2-way Dumps.
16—8-yd. standard gage, 1-way Dumps.

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1—9½ x 12 in. D.C., 3 D., Buffalo, with swinger
1—8 x 12 in., D.C., D.D. Mundy Skeleton.
2—7½ x 10 in., D.C., D.D., Mundy with boiler.

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100 tons, 45 lb. relayers with fastenings.

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60 Tons

New 65-lb. Rails

100 Tons

New 16-lb. Rails

75 Tons

Relaying 80-lb. Rails

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1—Thew steam shovel, with ¾-yd. dipper, full revolving, with independent crowding engine, standard gauge.

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200—All steel Deckerville one- and two-way dump cars. Capacity ¾ to 1 yd.; 19-in. gauge.
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2—5-ton Deckerville locomotives; cylinders 5 11-16 x 8 in.; 19-in. gauge.

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1—10 x 12-in., 3-drum, double cylinder Lidgerwood hoisting engine.
1—7 x 10-in. double cylinder, double drum Mundy hoisting engine.

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Approximately 200 tons, 80-lb.

RAILS

These rails have never been used.

At a Bargain.

Contractors & Mill Supply Co.
Ellicott Square, Buffalo, N. Y.

LOCOMOTIVES

1—50-ton Baldwin
1—60-ton Baldwin
1—70-ton Mogul

CRUSHER

1—No. 3 McCully

Trans-American Eng. & Equip. Co.
956-29 S. LaSalle St., Chicago, Ill.

End of Year Sale

1—15-ton **Browning Locomotive Crane**, 8 wheel, M.C.B., 45-ft. boom, completely overhauled
1—15-ton **Browning Locomotive Crane**, 4 wheel, 38-ft. boom, good as new
1—10-ton **Industrial**, 8 wheel **Locomotive Crane**, 40-ft. boom, M.C.B. truck
1—35-ton **Locomotive**, standard gage
1—45-ton **Locomotive**, standard gage

Complete line of Contractors', Industrial and Electrical Equipment. Write for our prices on any equipment you need.

SERVICE EQUIPMENT COMPANY
Bourse Bldg., Philadelphia, Pa.

---

85 lb. A.S.C.E. Relayers

16,000 tons—with Angle Bars to match.
Available immediate shipment and centrally located.
We positively own these Rails and offer same in carload lots and over.
25,000 tons—Relayers—sizes 25 lb. to 100 lb. in stock at our Pittsburgh Yards and vicinity. Immediate shipment guaranteed and prices very attractive.
Carload and less than carload inquiries and orders solicited.
Rails cut to length for structural purposes.
Frogs, Switches, Bolts, Nuts, Spikes and all Accessories.

L. B. FOSTER COMPANY
Park Building, Pittsburgh, Pa.

RAILS

all sections new as well as relaying for quick shipment.

Prices cheerfully quoted.

M. K. FRANK, Frick Building, Pittsburgh, Pa.

FOR SALE

LOCOMOTIVES

3—24 in. gauge Vulcan saddle tank, weight 7 to 9 tons each.

EXCAVATOR

1—Lidgerwood-Crawford drag line, complete with hoist, 2 buckets and 70 ft. steel boom.

Chicago Machinery & Equipment Co.
Seattle, Wash.

EQUIPMENT FOR SALE

2—**Clayton** duplex climax, 10 x 14 x 10, air pressure 60 lb., capacity 694 cu. ft.
2—Rand straight line steam driven **Compressors**, size 12 x 12 x 16, capacity 251 cu. ft.
2—Yorke straight line steam driven **Compressors**, size 10 x 10 x 10, capacity 136 cu. ft.
1—Marsh-Capron, ½-yd. **Concrete Mixer**, boiler and engine on wheels and side loader.
1—Smith Class "H" **Tower Elevator**, with bucket 34 cu. ft.
40—Contractors' **Dump Buckets**, ½, 1, 1½ and 2 yd.
1—Theodore Smith, 1-yd. **Orange Peel Bucket**, practically new.
1—**McMyler Clam Shell**, 1½-yd. **Theo. Smith**, 1 yd.
60—**Koppel Cars**, 24-in. gauge, ½, 1, 1½ and 1½-yd.
2—Morris centrifugal **Water Pumps**, with engine, 8-in. suc., 6-in. discharge.
1—**Van Wie Centrifugal** with Dake **Engine**, 8-in. suction, 6-in. discharge.
1—**Bush** centrifugal Belt, 8-in. suction, 6-in. discharge.
7—Horizontal stationary **Engines**, 8-10-15-25 and 35 H.P.
2—Stickney Horizontal **Gasoline Engines**, 10 H.P., new, 13 H.P.

MARINE METAL & SUPPLY CO.
167 South St., New York City
Warehouse—15th & Henderson Sts., Jersey City, N. J.

LOCOMOTIVES

Narrow and Standard Gage for every service, rebuilt, immediate delivery.

Locomotive Cranes, Steam Shovels, Cars, Etc.

SOUTHERN IRON & EQUIPMENT CO.
Atlanta, Georgia

RELAYER STEEL RAILS

Immediate delivery

30 tons 56-lb.
60 tons 60-lb
60 tons 65-lb.
40 tons 67-lb.

Located in Richmond, Va.

BOXLEY, CHISHOLM & HALL
Richmond, Va.

SEARCHLIGHT SECTION

Second Hand Equipment

MARSH'S GUARANTEED LIST

Buckets
1—2-yd. Hayward
4—1¼-yd. clam-shells, various makes
1—1-yd. orange-peel bucket
1—1-yd. Page Dragline bucket
1—2-yd. Page Dragline bucket
1—½-yd. Slack-line outfit complete

Cars
20—4-yd. Western, 36-in. gauge cars
20—1½-yd. Western 24-in. gauge cars
30—12-yd. Western standard-gauge cars
30—2½-yd. quarry cars, steel bodies
20—60,000 capacity gondolas

Compressors
1—Ingersoll-Rand Imperial type X-B-2, capacity 2400 ft., belt-driven
2—Bury Duplex, cap. 500 ft. each
1—Ingersoll-Rand Imperial Type 2 stage belted, 250 ft. per minute. New
1—14 x 12 Laidlaw-Dunn-Gordon belted
1—Sullivan 2-stage steam-driven, cap. 1800 ft. Lots of others.

Cranes
1—20-ton, 8-wheeled Browning, with 50-ft. boom and 1½-yd. Clam Shell, 6 months old.
1—10-ton American, single line, 4 wheel.
1—15 Ton Browning, 4-wheeled
1—O & S, 12-ft. gauge. All steel, good as new
2—McMyler 14-ft. gauge. All steel, fine

Crushers
1—No. 5 McCully
1—No. 6 Gates, style K, complete plant
1—No. 7½ Austin complete plant
1—No. 8 McCully
1—No. 9 Gates K, good as new
1—No. 30 Kennedy
1—20 x 24 Traylor Saw Crusher
1—Shaft for No. 7½ Gates

Road Builders Outfit
10,000 ft. Koppel 24 in. ga. portable track
30 Koppel V-shape 24 in. ga. cars

Drag-Lines
1—Page drag-line, 50-ft. boom, 1-yd.
1—Class 24 Bucyrus
1—Slack-line outfit complete, 1-yd.

Hoisting Engines
2—7 x 10 D.C., D.D. Americans, with boiler
1—6½ x 10 D.C.D.D. Lidgerwood, with boiler
1—7 x 10 D.C., D.D. Flory, with boiler
1—9 x 10 D.C., 3-drum Lidgerwood, with boiler
1—10 x 12 single cylinder Lidgerwood Unloader Engine
1—8 x 12 D.C., D.D. Mundy D.C., D.D. with boiler
1—3½ Dake Swinger
1—5 x 8 American Swinger
1—6 x 9 O. & S. Builders Hoists

Locomotives
2—10 x 16—36-in. gauge dinkies
2—9 x 14—36-in. gauge, just overhauled
2—7 x 12—24-in. gauge,
1—150 ton Shay, geared, almost new
1—20 x 28 Mogul, good as new
2—60-ton, 10-wheelers, 170 lb. pressure
2—50-ton standard gauge Shay, geared, almost new

Steam Shovels
1—No. 1 Thew traction shovel, 1-yd.
1—No. 0 Thew shovel, first-class
1—18B Buyerus Traction
1—Model "41" Marion st. gg. trucks
1—Model "60" Marion 2½-yd. dipper
1—Model "61" Marion, extra high boom
1—70-ton Bucyrus, first-class
1—Model "50" Marion, almost new

Rollers
1—10-ton, 3-wheeled
1—10-ton Austin gasoline
1—8-ton tandem

Rail
3000 tons, from 30 to 60 lb.

Miscellaneous
1—Keystone Excavator, new last winter
1—10 x 6 x 10 Duplex steam
1—10 Morris Sand Pump
1—No. 2 Vulcan steam hammer
20—Steam drills, various sizes and makes
2—Steam Tugs
4—Dump scows
4—Tanks, various sizes
1—Holt 40-60 Caterpillar tractor
1—Huber Steam Tractor
1—Western Elevating Grader, good as new
1—Derrick car, 9 x 12, 3-drum engine, with claw shell, good condition

If you don't see it here write anyhow and we will get it for you.

MACHINERY WAREHOUSE & SALES COMPANY, *Successors to* GEO. C. MARSH & CO.
Tel. Harrison, 5799 **733 Old Colony Bldg., Chicago**

READY FOR IMMEDIATE SHIPMENT

LOCOMOTIVE CRANES

1—20-ton **new** Orton & Steinbrenner, 8-wheel, M.C.B. equipped, 50-ft. boom, bucket operating drums, 54-in. A.S.M.E. boiler.

1—20-ton 8-wheel M.C.B. Ohio, 35-ft. boom, 1½-yd, bucket.

1—15-ton **new** O. & S. 8-wheel M.C.B., 45-ft. boom, 1¼-yd. bucket.

1—10-ton American, 4-wheel, 38-ft. boom, bucket operating drums.

AIR COMPRESSOR

1—Ingersoll-Rand Imperial Type 10, capacity 1190 ft. free air per min. at 110 lb. pressure. Two-stage air, duplex steam.

BOILERS

4—200-H.P. Bonus, Kewanee (Heine type) water tube boilers, complete, all fittings, 150. lb pressure.

HOISTING ENGINES

2—No. 3½ Dake swinging gears, 7 H.P.
2—10 x 12 single friction drum, double cylinder, skeleton Brown Hoists. Drums 48 in. dia. Heavy duty.
1—8½ x 10 D.C.D.D. Lidgerwood, with boiler and four winch heads.
1—7 x 10 D.C.D.D. Lidgerwood skeleton.
1—6½ x 12 D.C.D.D. Mundy with boiler.
4—7 x 10 D.C.D.D. Lidgerwood with boiler.
2—16-H.P. Byers, D.C.D.D. Hoists, with boilers and swingers.

F. MAYER
1601 Monadnock Bldg., Chicago, Ill.

LOCOMOTIVE CRANES

Industrial, 10 ton, 4 wheel, single line.
McMyler-Interstate, 20 ton, 58-ft. boom, 8 wheel, M.C.B., equipped for bucket.

STEAM SHOVELS

Thew No. 1, 1-yd., standard gage, revolving.
Thew No. 0, ⅝-yd., on traction wheels.

Moore Bros REBUILT MACHINERY
39 S. La Salle Street, Chicago, Ill.

LOCOMOTIVE CRANE

Industrial Works, 4-wheel, single drum
10 tons at 12 feet
5 tons at 20 feet
2 tons at 45 feet

Immediate delivery.
First-class condition.

CENTRAL CREOSOTING COMPANY
Conway Bldg., Chicago, Ill.

FOR SALE
1—50-ton Vilter
REFRIGERATING PLANT
1—Skeleton
STEEL BUILDING
75 x 150 ft. and about 40 ft. high to roof trusses
For full particulars and price apply to
M. J. HUNT
1316 Beach Street, Philadelphia, Pa.

FOR SALE
No. 0 Vulcan Improved, Steam Pile Driver
HAMMER
Address
NORTH-EASTERN CONSTRUCTION CO.
225 Fifth Avenue, N. Y. City.

SEARCHLIGHT SECTION

Second Hand Equipment

FOR SALE—IMMEDIATE DELIVERY

Owned By Us and Sold Under Absolute Guarantee.

STEAM SHOVELS

1—Marion Model 250 Revolving Steam Shovel, mounted on four 4-wheel trucks, 65-ft. boom with 3½-yd. dipper. Also equipped with 100-ft. dragline boom and 5-yd. Page dragline bucket.
5—70-C Bucyrus, shop numbers 1410, 1351, 1126, 1287, 1245.
3—Standard 70-ton Bucyrus, shop numbers 868, 733, 1482.
2—45-C Bucyrus, shop numbers 1297, 1202.
1—95-C Bucyrus, shop number 1304, 5-yd. dipper.

DRAG LINES

1—Model 220 Marion, all-steel dragline, shop No. 2839, mounted on four 4-wheel trucks, equipped with 60-ft. boom and 2-yd. Page bucket.
1—Class 14 Bucyrus, all-steel dragline, shop number 702, mounted on skids and rollers, 60-ft. boom and 2-yd. Page bucket.

DUMP CARS

50—12-yd. standard gage Western air dump.
15—12-yd. standard gage Oliver air dump.
100—3-yd. and 4-yd., 36-in. gage cars.
50—1½-yd., 24-in. gage.
13—Heavy duty, 4-yd. Western, 36-in. gage dump cars.

REVOLVING TRACTION SHOVELS

1—Class 14-B Bucyrus, ¾-yd. dipper, shop number 1869.
1—Class 14-B Bucyrus, ¾-yd. dipper, shop number 1663.
1—Class 18-B Bucyrus, ¾-yd. dipper, shop number 1554.

SPREADER CARS

2—Standard Western spreaders, almost new.
1—Standard, all-steel Jordan air spreader (for rent only).

LOCOMOTIVES

1—19 x 24 6-wheel switchers, Pittsburgh build, weight 50 tons.
1—16 x 24 Baldwin, 6-wheel switchers, weight 42 tons.
2—16 x 24 Davenport 6-wheel switchers, weight 42 tons.
2—16 x 22 4-wheel switcher, C. M. & St. P., J-2 class, weight 32 tons.
5—36-in. gage, 10 x 16 and 9 x 14 Vulcan and Davenport saddle tank locomotives.
2—7 x 12-in., 24-in. gage Davenport, shop number in the twelve hundred.

SHEET PILING

72 pcs. Jones & Laughlin, 18 ft. long by 12 in. wide.

CLAPP, NORSTROM & RILEY EQUIPMENT CO.

12 and 14 South Canal St., Chicago, Illinois

Northwestern Branch: 1308 Pioneer Building, St. Paul, Minn.

FOR SALE

Industrial Works

LOCOMOTIVE CRANE

Capacity 20 tons at 12 ft., 8-wheel car (not M. C. B. but Bogie truck) 50 ft. and 36 ft. boom, new double drum, Ohio boiler, cab, magnet control equipment. Overhauled this summer. Working every day. Inspection Ohio. Available Dec. 15.

Wire for appointment.

INDUSTRIAL WORKS
Bay City, Mich.

WE BUY

STEEL WIRE ROPE

Plow or crucible, half to one inch, new or second-hand. Market price for kind, condition and length.

CLARK & COMPANY (Incorporated 1895)
225 Fifth Avenue, New York, N. Y.

STEAM SHOVELS

1—"85-C" **Bucyrus,** late number, fine condition, 4-yd. dipper.
1—"76" Marion, **special,** 3-yd. long boom, stripping shovel.
1—"70-C" Bucyrus, 2½ yd.
1—"65-C" Bucyrus, 1½-yd. Sewer Shovel.
1—"261" Marion, 3-yd. drag line, 115-ft. boom, traction.
1—No. "0" Thew, ⅝-yd. traction.
2—"28" Marions, ¾-yd. traction.
1—"14-B" Bucyrus, ⅝-yd. traction.

The above are ready to ship and operate. We are prepared to furnish detailed inspection report on these machines by any Technical Inspection Company you designate.

Correspondence solicited.

CHESTER A. PHILLIPS & COMPANY
Old Colony Bldg., Chicago, Ill.

FOR SALE

CRANE

with five-ton chain fall, made by J. C. Speidel, Reading, Pa., made up of two 15-in. I beams, 24-in. on centers, 12-in. wheels at each end; and rails to carry wheels are approximately 24 ft. 8 in. on centers. Can be inspected.

13901—Eng. News-Record.

Quarry Equipment

No. 8-K Crusher
No. 4 Crusher
3—150 H.P. Boilers
300 H.P. Buckeye Automatic Engine
7 x 10 D.C., D.D. Lidgerwood Hoist and Boiler
Porter 36-in. Dinkey
40—All Steel, 2-yd. Quarry Cars
300 ft. 8-in. Wrought Pipe
Two million gal. Compound Steam Pump
Two 3-yd. Friction Hoists
80-ft. Belt and Bucket Elevator
Three 48-in. Revolving Screens

Many other items. Send for complete list and prices. Immediate delivery.

LEHIGH STONE COMPANY
Kankakee, Ill.

Oh Them Happy School Days!

Remember the old copy books wherein we learned how to write so other folks could read what we wrote?

The beautiful Spencerian script at the top—pen over your left shoulder—and all that kind o' thing?

Then we wrote it over and over all the way down the pages, each line getting worser and worser as we went down.

Oh, them happy days! Can you beat 'em?

We not only learned how to write, but we got a lot of wisdom we have never forgotten.

Here is one of those copy book captions that has saved us thousands of dollars:

"WHATEVER IS WORTH DOING AT ALL IS WORTH DOING WELL."

How do you do when it comes to the matter of purchasing elevator equipment?

Are you one of the fellows whose copy book caption was:

Cheap John. As Cheap As We Can. Cheap. Cheap. Cheap.

Buy cheap stock, cheap oil, cheap help, cheap tools, if you are a Cheap John, **BUT NEVER BUY A LOW PRICE ELEVATOR IF YOU WANT A CHEAP ELEVATOR.**

If you want to get into the right kind of company, follow the example of fellows like these:

United Gas Improvement Co.	H. J. Heinz Co. "57"	Crane & Co. (Dalton)
Yale & Towne Mfg. Co.	International Harvester Co.	United States Government
Cluett Peabody & Co.	John Wanamaker	E. I. Du Pont & Co.
Consolidated Gas Co.	Remington Typewriter Co.	General Electric Co.
National Cash Register Co.	Continental Gin Co.	Packard Motor Car Co.
Hammermill Paper Co.	Erie Railroad Co.	Continental Can Co.
Proctor & Gamble Co.		American Tobacco Co.
		John Morrell & Co.

All of whom, and over 2000 more, will tell you, if you want to save money, be sure and

"Hook 'er to the Biler"

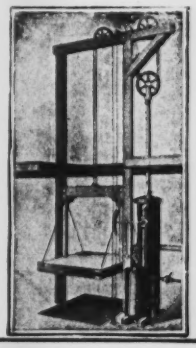
CRAIGE RIDGWAY & SON CO., Coatesville, Pa.

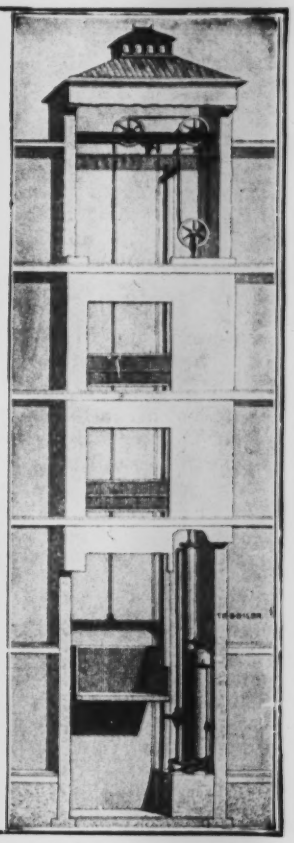
ELEVATOR MAKERS TO FOLKS WHO KNOW

Direct Acting

Over 2000 In Daily Use

Doubled Geared





If there is anything you want—

or something you don't want—that *other* readers of this paper can supply—or use—advertise it in the

Searchlight Section

NOW is the time to offer good second-hand machinery for sale. Demand exceeds production for immediate delivery of some equipment; that's why the market on used equipment is so good.

NOW—or any other time, use the Searchlight Section for advertising

Agencies Wanted	Desk Room Wanted	Industrial Sites	Positions Wanted
Agents Wanted	Machinery For Sale	Machine Shops	Properties For Sale
Auction Notices	Machinery Wanted	Miscellaneous Wants	Receivers' Sales
Buildings For Sale	Educational Courses	New Industries Wanted	Representatives Wanted
Business Opportunities	Employment Agencies	Partners Wanted	Salesmen Available
Civil Service Opportunities	Exchanges	Patents For Sale	Salesmen Wanted
Contracts To Be Let	Factory Buildings For Sale	Patent Attorneys	Subcontracts Wanted
Contracts Wanted	For Rent Items	Plants For Sale	Work Wanted
Desk Room For Rent	Franchises	Positions Vacant	Etc., Etc., Etc.

26

America Divided

In this time of unprecedented national peril and world peril, do you want America to be one nation, strong with the strength of unity? Or do you want America split with perhaps half a dozen sections, weak with the ills and evils of sectionalism?

THIS LAST IS NO DANGER BORN OF hysterical dream. America has been committed by act of Congress to a course leading toward such a disastrous result, and this split in national life will begin July 1, 1918—unless the present law be altered.

Here is the situation:

MODERN NATIONS ARE BOUND TOgether not so much by the machinery of government as by Ideas. Fundamental ideas held in common by all, fully exchanged so that distantly placed people may understand and sympathize with each other—these are what bring a nation together and what hold it together.

THE GREATEST INSTRUMENT AND medium for the constant dissemination of these big nation-binding ideas is the press—particularly the weekly and monthly periodicals. These periodicals have not local or sectional bias; they go to all parts of America, and serve all parts alike; their great service is in helping bring all parts close together into one through a common understanding.

THESE NATION-BINDING PERIODICALS are confronted with certain injury and destruction —which means loss to you personally, and loss to your country. Postal legislation was introduced in the present Revenue Bill, and is now law, which divides the country up into "zones" and increases the average carrying charge upon magazines and periodicals about 300 per cent—as much as 900 per cent for the more remote sections of the country. This increase varies from 50 to 900 per cent.

THIS TREMENDOUS INCREASE IN RATES is not necessary for the business solvency of the Post Office Department. Last year the Post Office Department earned a surplus of nearly $10,000,000.

THIS MEASURE IS A TAX-GATHERING contrivance. *It is a tax upon ideas*—upon that spreading of ideas which hold us together and inspires us as a nation. The Post Office was never designed as a tax-gathering contrivance; it was basically designed to give service to the people—*to all the people at the same rate.* The Post Office should not be perverted from its noble purpose.

AND ANY SUCH METHOD OF TAXATION is not necessary in order to tax the publishers' profits. The publishers are not trying to evade taxation. They will gladly accept any rate of tax upon their profits that may be levied. Most of them have gone on record as being willing to turn over to the Government their *entire net profits* for the period of the war.

This measure, through its "zone" system, will have the following disastrous consequences:

1. It will destroy a large part of the periodicals of the country. You will lose the magazines that have kept you informed on your country's problems, that have helped you in your work. Your children will lose the clean publications that have entertained and help educate them. And eventually such magazines as do survive will have to pass their unnecessary increase in cost on to you in case you live at a distance from any publishing center. It amounts to this: *You are fined because your occupation or your preference prevents your living in New York.*

2. Infinitely more serious, this "zone" system will result in dividing the country into sections, each developing its sectional ideas. The nation will be split into an East, a Middle West, a Pacific Coast, a South, a Southwest. And this split will be made in the world's greatest crisis, when we should be striving for union rather than disunion—when North should be bound to South and East bound to West by the constant flow of ideas—*National Ideas.*

This is the time of all times when America must be a *united* America—*one nation* strong with the strength of unity.

***Let your* influence be used to that end.**

Write your Congressman and demand the repeal of the iniquitous postal amendment

THE AUTHORS' LEAGUE *of* AMERICA, INC.

REX BEACH, President

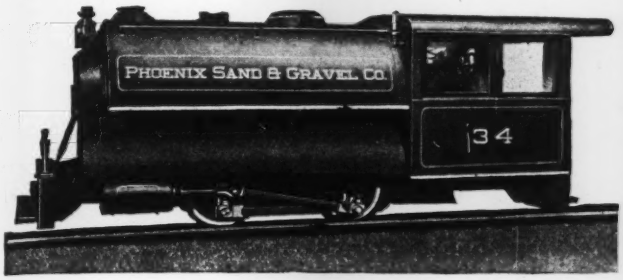
Executive Committee

GERTRUDE ATHERTON
ALICE DUER MILLER
ULIAN STREET

GELET BURGESS
HARVEY O'HIGGINS
LOUIS JOSEPH VANCE
GEORGE BARR McCUTCHEON

CHANNING POLLOCK
LEROY SCOTT
HELEN S. WOODRUFF

LOWER UPKEEP MEANS LARGER PROFITS



Profits increase in proportion to the reduction in cost of upkeep and repairs to equipment and machinery.

Locomotives built to require the least attention add to your profits because work progresses when the locomotives are in service. Idle locomotives delay work and disarrange your whole schedule. That's why an idle locomotive is costly.

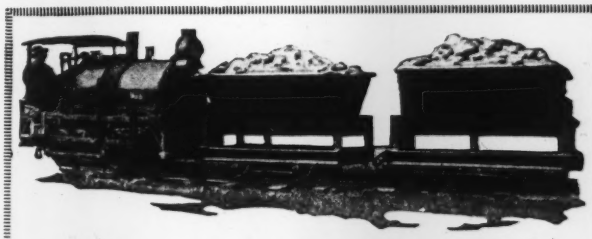
Our locomotives for contractors are designed and built for long life and continuous service. Parts liable to wear are kept in stock for immediate shipment. These parts are made to templates and gauges, insuring a perfect fit without extra machining. By this method long delays waiting for duplicate parts are avoided.

Get in touch with us when you need a locomotive.

AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET, NEW YORK

McCormick Building, Chicago, Ill. A. Baldwin & Co., New Orleans, La.
Dominion Express Building, Montreal, Canada
N. B. Livermore & Co., Merchants National Bank Building, San Francisco, Cal.
Northwestern Equipment Co., Northwestern Bank Building, Portland, Oregon.



Why pay double for Coal?

With the price of coal sky-rocketing and the outlook that soon none will be had at any price, you had better give serious thought to the fuel situation. **Bell Locomotives burn kerosene.**
Write for details.

BELL LOCOMOTIVE WORKS, Inc.
30 Church Street, New York City

Steam and Compressed Air Locomotives

for all services, Reliable, Sturdy, Economical

Contractors' Dinkeys

Write us for printed matter covering the entire field

H. K. PORTER CO. 1202 Union Bldg. Pittsburgh, Pa.

KOPPEL

Haulage Equipment

Air and Hand Dump Cars, Dinkies, Portable Track, Switches, Rails, Etc.

For Sale or Rent

Prompt Shipments

Write for catalogs and Sale or Rental terms.

OPPENHEIM-ARTHUR KOPPEL CO.

Branches all over the World

PLANT: KOPPEL, PA.

SALES OFFICES: New York Chicago Pittsburgh Pacific Coast Representative, Koppel Sales Co., Inc., San Francisco.

WATSON
Bottom Dump Semi-Trailer

This **Watson** Bottom Dump Semi-Trailer is ideal for speedy hauling. No fussy device to get out of order. Load is dropped exactly where and when desired. Three sizes—120 cu.ft., 100 cu.ft., 81 cu.ft. Axle has Timken Roller Bearings. Instantly converted into trailer by addition of lower front gear and wheels.

Send today for full data on Watson "Tractortrucks," Trailers and Semi-Trailers.

Watson Wagon Company
20 W. Center St., Canastota, N. Y.

Western Outfits

assure the grading contractor of profitable progress under all conditions.

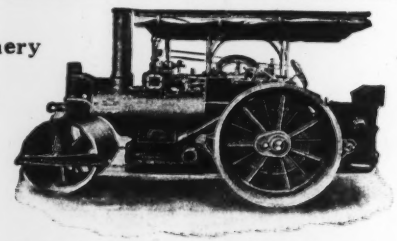
Their substantial construction and long lasting qualities cut down the overhead cost.

WESTERN Wheeled Scraper Co.
Aurora, Ill.

Let us send you our catalogs.

Quality Machinery

Buffalo Pitts Rollers



are purchased by discriminating buyers because of the many years of satisfactory service which they will render, the low repair costs and their general reliability. *All sizes—all types—write for catalogue.*

Built Only by
THE BUFFALO-SPRINGFIELD ROLLER COMPANY
SPRINGFIELD, OHIO

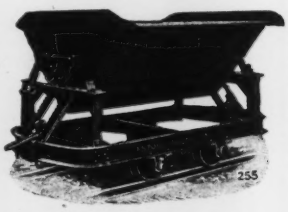
ROCKPORT

For docks, bridges, piers, foundations and paving blocks, granite is the ideal material. Quarried in monoliths of any size. Tidewater shipping facilities.

Rockport Granite Co.
Rockport, Mass.

GRANITE

EASTON CARS



Every Industrial Railway requirement, whether it be for Standard or Special Equipment, can be satisfactorily and economically met by the Easton Industrial Railway Service.

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Vulcan Locomotives are leaders for high tractive effort such as is necessitated by the hard service required in contracting or industrial work.

For forty years some of our first Vulcans have been steadily showing their haulage power over rough or hastily-laid tracks and around sharp curves.

Are you in need of a locomotive of this type?

VULCAN IRON WORKS
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Haul ⅓ More
Load your wagon with
Rapid Loaders
and keep the teams moving. Circular has all details—
write for it now.
The Bonney Supply Co., Inc.
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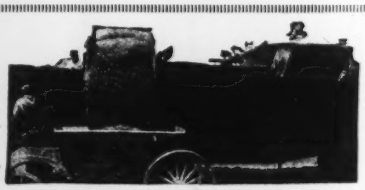

Municipal Bonds : :

Dealers in these securities look to NEWS-RECORD Proposal pages for information regarding new issues.

61

Dart MOTOR TRUCKS

Haulage is a most important branch of contracting. Progress of the various units of the contracting organization is often times entirely dependent on regularity of operation. Dart Dependability and practical immunity from breakdowns, is a valuable asset in contracting service.

We would be glad to furnish you with data.

Let us refer you to our nearest agent or write direct to us.

DART MOTOR TRUCK CO. WATERLOO, IOWA

CANTONMENT CONTRACTING

Perhaps no more responsible work has devolved on contractors than the expeditious building of the training camps for our National Army. Contractors and others concerned had to see that the equipment used was RIGHT.

The above photo taken at Camp Kearney, Cal., speaks volumes for Austin Western Road Equipment which has been used so largely at a great majority of the Cantonments, both by Contractors and the U. S. Government.

AT CAMP KEARNEY

Nine Austin Motor Rollers Were Used

the photo showing 7 three-wheeled rollers and 2 tandems. Contractors should get their names on the list for the new Austin-Western General Catalog soon to be issued.

Apply to the **Austin-Western Road Machinery Company, Chicago**

STANDARD

Refined Mexican Asphalt
(SOCONY BRAND)

Prepared in various grades for

Sheet Asphalt Pavements and Bituminous Macadam Road Construction

by either the penetration or mixing method

Standard Asphalt Block Filler
Standard Asphalt Road Oil

Specifications and other particulars on application

Standard Oil Co. of New York

Road Oil Department

SO SOCONY ASPHALTS AND ROAD OILS

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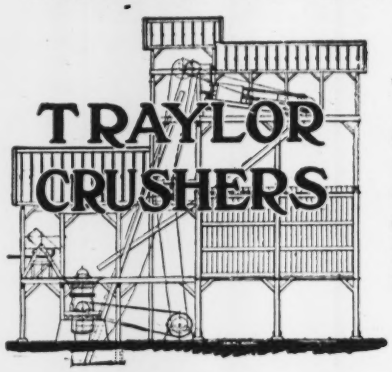

Our engineers have designed some of the largest crushing plants in the world.

Call upon us for plans or specifications to meet your conditions. We will send one of our engineers to co-operate with you in the design and laying out of your plant.

Tell us your requirements.

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New York Office: 32 Church St. | Main Office and Works: Allentown, Pa. | Western Office: Salt Lake City, Utah

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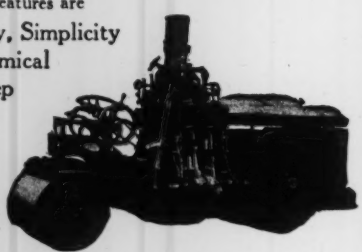
Erie Tandem Rollers

are Built for SERVICE

Their characteristic features are

Strength, Durability, Simplicity of Operation, Economical Maintenance, Upkeep and Long Life.

All Sizes in Stock



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equipped with

Air-Separation

for grinding all materials to a powder.

If you have a grinding proposition ask us for full information today.

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for the superiority of

Vinal Haven Improved Granite Block Pavement

It is Adaptable to the Needs of Auto and Truck alike

REASON No. 5 The close grain qualities of Vinal Haven Improved Granite Block Pavement make it smooth, easy riding for the daintiest coupe—and its rugged make-up of Granite enables it to stand the strain of heaviest trucking through the years. Write for the full list of its advantages.

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CRUSHING ~ WORLD KNOWN
ROLLS-CRUSHERS
EARLE C. BACON, ENGINEER
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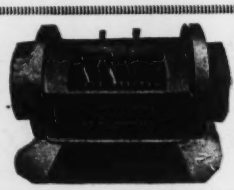

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CRUSHING ROLLS—MAGNETIC SEPARATORS

Crushing Plants complete in all details from 100 to 5,000 tons daily capacity.

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LONG LEAF **SOUTHERN PINE** (DENSER THE BETTER)

The World's Standard Structural Material—Now as Always.

Its Element of Comparative Value is Density.

TRADE-MARKED **BOGALUSA** EXTRA DENSE

Trade-Mark Reg. U. S. Pat. Office

is the Standard of Quality in Long-Leaf Southern Pine.

The Chief Factor of Safety is Responsibility.
The Best Proof of Responsibility is the Trade-Mark

INSIST ON SEEING THE NAME **BOGALUSA** ON THE SO. PINE YOU BUY

and you will enjoy an AUTOMATIC GUARANTY of EXTRA DENSE timber, Masterful Manufacture, Scrupulous Count ("every foot a foot") and Grading—at the mill—to meet the very exacting specifications of the FACTORY MUTUALS, the AMERICAN SOCIETY FOR TESTING MATERIALS, the AMERICAN RAILWAY ENGINEERING ASSOCIATION and the SOUTHERN PINE ASSOCIATION.

ORDER IT BY THE NAME "BOGALUSA" **TRADE-MARKED** ON TIMBERS, PLANKS, BOARDS AND BUNDLES

of the internationally-famous product of the largest saw-mill in the world (1,000,000 feet a day). Let this be your "Safety First" in Lumber Buying.

SPECIFY "BOGALUSA" ON YOUR ORDER FOR SOUTHERN PINE.
INSPECT IT. IF NOT IDENTIFIED AS "BOGALUSA," REJECT IT AS "NOT PER ORDER."

THE BOGALUSA BOOK IS INTERESTING—VALUABLE—FREE.
FULL OF PINE STATISTICS. AUTHORITATIVE. WRITE FOR IT.

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SOUTHERN PINE SERVICE ASSOCIATION

Always

at your service

20,000,000 feet

Yellow Pine

Immediate Shipment

Philadelphia Yard Stock

Rough or Dressed

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Elastite EXPANSION JOINT

The original and only Elastite Joint

Comes to the job ready for use. No joints to pour. No spacing strips to remove.
Used in National and Dixie Highways.
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PAVING BLOCKS

NEVER BUCKLE OR DECAY

We have been in the creosoting business 30 years and not a single piece of wood treated by us has ever decayed. **We manufacture Creosoted:**—Conduit, for underground wires, Poles, Ties, Cross Arms, Anchor Blocks, Posts, Piles, Plank, Lumber, Wharf and Bridge Timbers, etc. Also Wood Pipe and Steam Pipe Casings. Send for Catalogue C.

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Complete Sales, Grading and Inspection Service on

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WHITE OAK and YELLOW PINE

Timber **Piling** **Railroad Cross Ties**

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CENTURY WOOD BLOCKS

PROMPT shipment of creosoted wood blocks, ties, timbers and lumber.

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IMMEDIATE STOCK DELIVERIES

Avenarius CARBOLINEUM

PRESERVES WOOD EVERYWHERE

Simple methods—known costs—explained in new special circular—get it. Avenarius Carbolineum prevents decay of wood. Doubles life of timber. Costs 1/2 to 2c. per sq. ft.—$5 to $12 per 1,000 ft. B. M. Applied by brush, spray or open tank. 40 years' continuous service. Depots everywhere.

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ASPHALTIC CONCRETE PAVING MATERIAL

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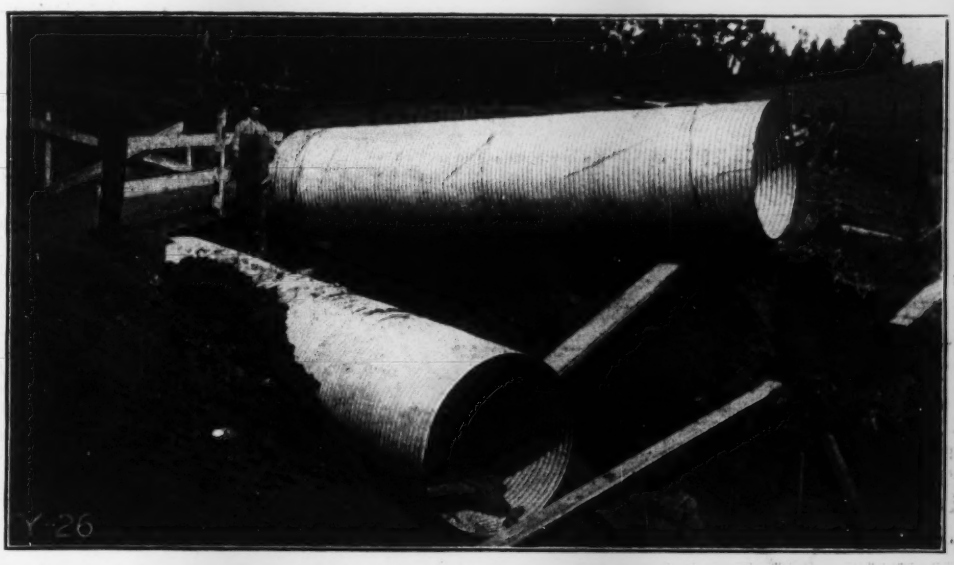
New Orleans, La. (Station B)

Creosoted cross arms, Lumber, Paving Blocks, Piles, Poles and Ties.
Private free wharf for ocean vessels at New Orleans.
Capacity 100 million feet board measure annually.

Plants at New Orleans, La., and Louisville, Miss.

While the Boys Are Gone to War

Labor is going to be higher-priced and harder to get than ever before



Have You Ever Realized That

"Armco" Iron Corrugated Culverts

are transported and installed with but a small fraction of the labor necessary for other types of construction? Skilled workers and heavy tackle are not necessary—just common sense and a minimum of elbow grease. Where "Armco" Iron Culverts are employed the ditch is often opened and closed and traffic resumed on the same day.

For all that, they are Built to Last. Their material is the *purest* and most *durable* of irons, and their construction is the recognized standard.

Write or phone the Nearest Manufacturer for full information on Rust-Resisting "Armco" Iron Culverts, Flumes, Gates, Sheets, Roofing and Formed Products.

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Dixie Culvert & Metal Co.
California, Los Angeles
California Cor. Culvert Co.
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California Cor. Culvert Co.
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Delaware, Clayton
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Florida, Jacksonville
Dixie Culvert & Metal Co.
Georgia, Atlanta
Dixie Culvert & Metal Co.
Illinois, Springfield
Illinois Corrugated Metal Co.
Indiana, Crawfordsville
W. Q. O'Neall Co.
Iowa, Des Moines
Iowa Pure Iron Culvert Co.
Iowa, Independence
Independence Corr'd Culvert Co.
Kansas, Topeka
The Road Supply & Metal Co.
Kentucky, Louisville
Kentucky Culvert Co.
Louisiana, New Orleans
Dixie Culvert & Metal Co.
Maryland, Baltimore
Wm. M. Baker, Munsey Bldg.
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New England Metal Cul. Co.
Michigan, Bark River
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Minnesota, Minneapolis
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Nebraska Culvert & Mfg. Co.
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Nevada Metal Mfg. Co.
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North-East Metal Culvert Co.
New Jersey, Flemington
Pennsylvania Metal Cul. Co.
New York, Auburn
Pennsylvania Metal Cul. Co.
North Dakota, Wahpeton
Northwestern Sheet & Iron Wks.
Ohio, Middletown
American Rolling Mill Co.
The Ohio Corrugated Culvert Co.
Oklahoma, Shawnee
Dixie Culvert & Metal Co.
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Pennsylvania Metal Cul. Co.
South Dakota, Sioux Falls
Sioux Falls Metal Culvert Co.
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AMERICAN ARMCO INGOT IRON
Resists Rust

Canada: Canada Ingot Iron Co., Ltd., Guelph, Sherbrooke, Winnipeg, Calgary

AMERICAN ARMCO INGOT IRON
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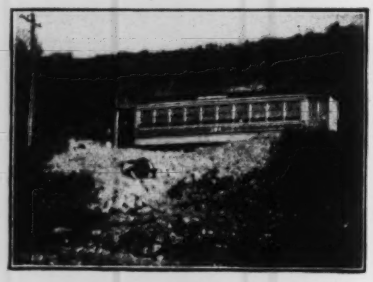

Every Little Valley Needs

some sort of provision for drainage. From the standpoints of time, labor, economy, convenience and permanence the best solution for the problem is

"ACME" (NESTABLE)

Corrugated Anti-Corrosive (NO-CO-RO METAL) **Galvanized Culverts**

Furnished either Set-up or knocked-down as desired. The transportation of these Culverts, in nested form, is easy and the placing can be handled very quickly by average laborers.

The job is permanent, too, for NO-CO-RO METAL is 99.90% pure iron and resists rust.

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CANTON, OHIO, U.S.A.

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Do Successful Contractors Use

FELTON'S IMPROVED COUPLINGS

for Conduit and Sewer Rods?

A big contractor says:

These Couplings represent the latest and most improved device for connecting sewer and conduit rods. No other coupling possesses so many strong features of merit.

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Manufacturers of
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Permanent Water-Tight Sewer Pipe Joints—

AT LITTLE COST

Not only do these ompounds give permanent watertight joints but joints flexible enough for the pipe to be jarred out of line without leakage.

JOINTITE and FILTITE

Write nearest office for Catalog 12 with helpful hints on sewer pipe joints.

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Security Sewer Rods

Security Rods are made from second-growth hickory, with malleable iron couplings swedged or shrunk down very tightly on to the curved places at end of sticks. Security couplings *cannot* come off.

Joint and unjoint easily and quickly—light weight—long runs easily made. No slack but lend themselves to all practical bends.

They cannot buckle or uncouple in the duct.
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No odors. Absolutely sanitary. Now used in Los Angeles and being installed in New York City.

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Sewer Catch-Basin Castings, Etc.

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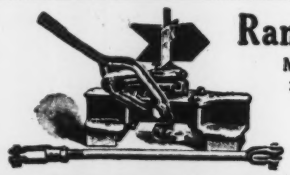

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Main Office, Hillburn, N. Y.
New York Office, 30 Church St.

Switch Stands, Plantation Cars, Switches, Frogs, Etc.

Black and Galvanized Sheets

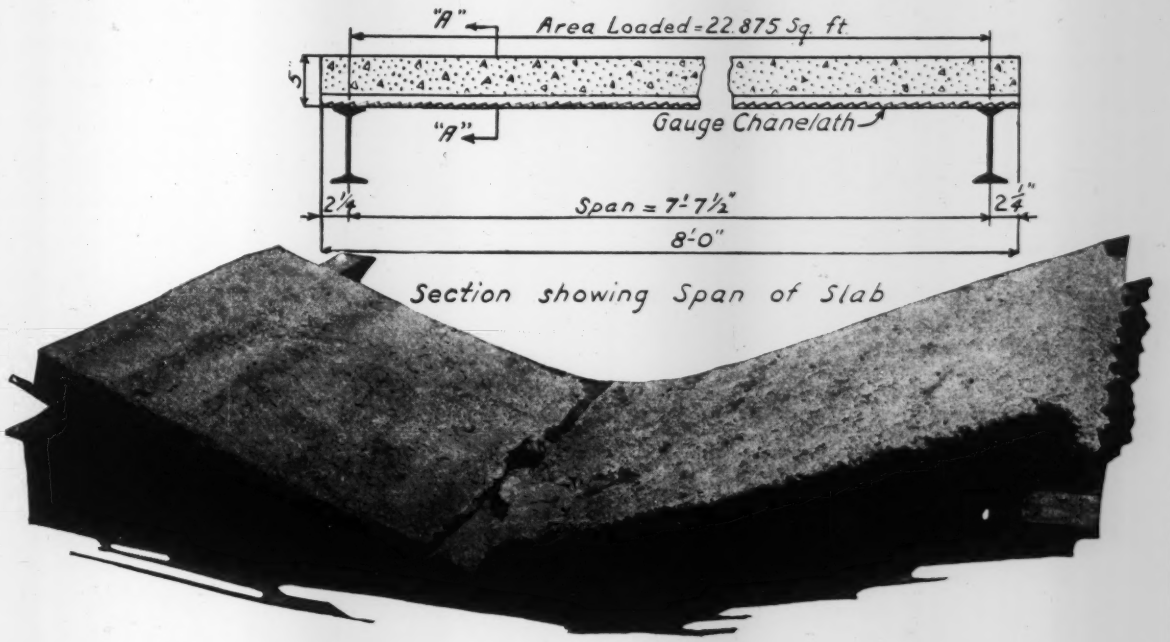
APOLLO-KEYSTONE Copper Steel Galvanized Sheets

Demand this material exclusively FOR CULVERTS, FLUMES, TANKS, ROOFING, SIDING, and all forms of exposed sheet metal work—highest in quality, durability and rust-resistance. We also manufacture APOLLO Corrugated and Formed Roofing Products, Black Sheets of every description, Electrical Sheets, Special Sheets, Bright Tin Plates, Keystone Copper Steel Roofing Tin, Etc.

AMERICAN SHEET AND TIN PLATE COMPANY, —— **General Offices: Frick Building, Pittsburgh, Pa.**

AMERICAN SHEET & TIN PLATE CO. APOLLO BEST BLOOM PITTSBURGH KEYSTONE COPPER STEEL

Reinforcing value of "T-Rib" "CHANELATH" equals high carbon steel rods



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The method of failure proves that "Chanelath" develops a bond with the concrete that is sufficient to develop the full strength of the steel.

The exceedingly high unit stresses in the steel at the time of rupture—the minimum being almost 50% more than the usual ultimate strength of medium steel reinforcing rods—proving "Chanelath" to be the equal, in reinforcing value, to the best quality of high carbon steel rods.

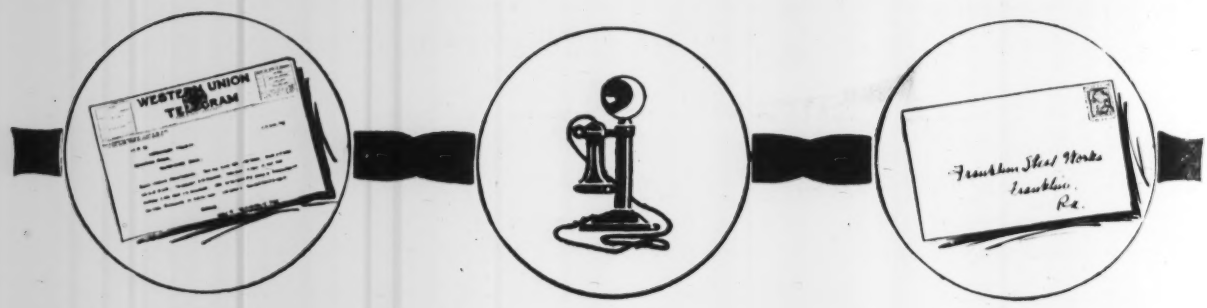
"Chanelath" is a one-piece form and reinforcement for concrete floors and roofs.

Let us send you a copy of the "Chanelath Handbook" and a complete report of the Philadelphia Tests.

North Western Expanded Metal Co.

Members of the Associated Metal Lath Manufacturers

900 Old Colony Building **Chicago, Ill.**



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"Franklin"

Steel for Concrete Reinforcing

You get it as promptly as you need it. Service is one of the chief things that has made the quality of Franklin Steel popular. Prices are right, too. Ask for quotations.

Bulletin explaining just WHY Franklin Steel is extra strong will be mailed you on request.

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A portable tool that can be kept in an ordinary tool box. It will bend any size bar to any angle—plain, round, square, twisted or deformed. It's very simple in construction, as you see; and Common Labor can operate it. The Efficiency Bar Bender will bend *hooks on rods* in one operation. The LOW price will surprise you.

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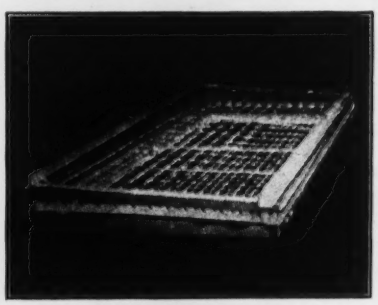

Space Savers in Transit

FORT PITT DOUBLE DECK BUNKS

have nothing on them to become lost, either when in use or in transit. They are strongly built in but two parts, with National Fabric Springs and with the best steel throughout.

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Bend Bars Yourself—Save Time and Money

Rods up to 1¼ in. diameter.

Vise arrangement keeps rods in alignment when making more than one bend in a rod.

Cast steel wearing parts. Any style power drive.

Write for price and data.

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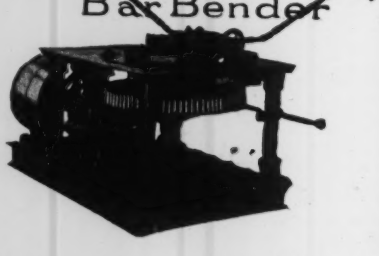

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This light, durable machine will be sent on approval for 30 days' trial. If not as represented, send it back.

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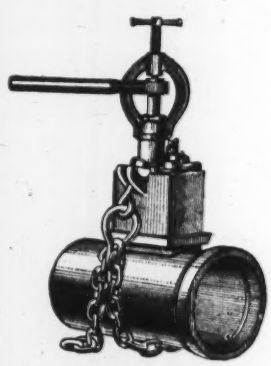
Write for latest bulletins of this and other waterworks appliances.



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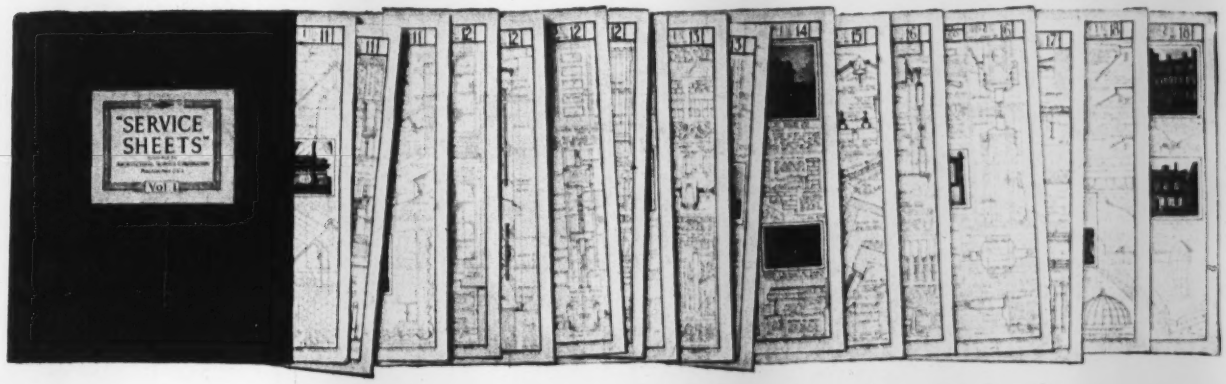

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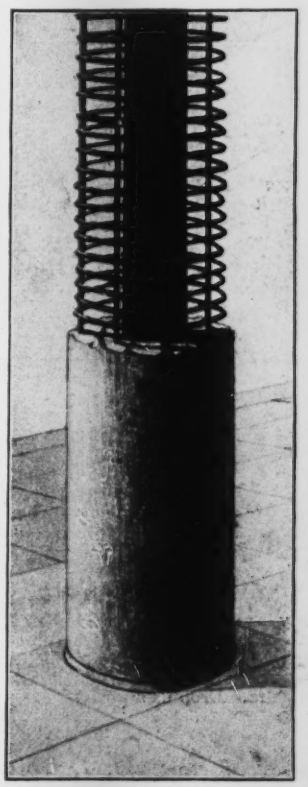

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SAVE Space Time Money

Cast iron cores are cast vertically. Sections can be depended upon to be uniform.

Largest orders can be filled on very short notice.

QUICK DELIVERY GUARANTEED

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Details of Emperger Construction sent upon request—tentative plans and estimates gladly furnished.

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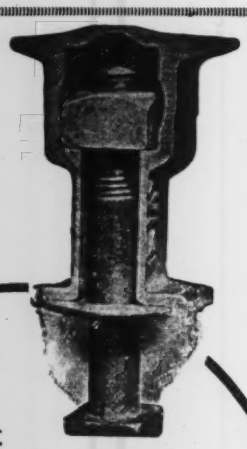

Easy to Insert and Always Secure

Security Inserts or Ceiling Sockets save much time in putting in place and never have to be renewed. They are nailed to the forms and the concrete poured around them. Attachment is made by inserting the nut in the recess or chamber, and then screwing the bolt up into it.

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LARGE AND SMALL
SINGLE AND IN GROUPS
BLACK AND GALVANIZED
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ALL GAUGES AND ANY KIND OF GEAR

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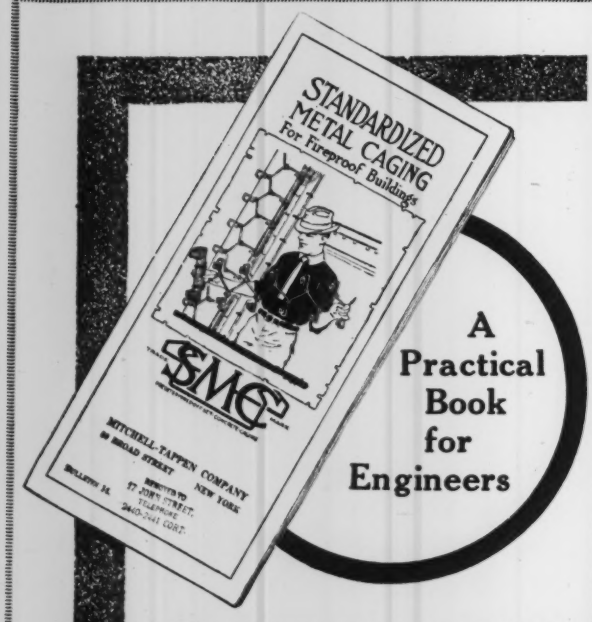

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Your free copy is ready. You need this book as a guide to economy in your spring construction work. Learn the value of S. M. C. in cutting down costs and bonding concrete to the steel structure. Drop us a postal.

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Riveted Plate and Structural Steel, Steel Sheet Piling, Steel Gratings, Cooling Towers, Castings.

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An Air-Cooled Floor
Write for Booklet A1J.

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For all kinds of concrete forms. Speedy, simple, economical, secure. Low in first cost. Indestructible. Six sizes. Write for free sample and prices.

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Waterproofing Materials and Protective Paints of proven dependability. **Send for the Bulletins.**

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Daylight and Fresh Air PAY

Lupton Factory: Interior of building with Pond Truss roof, giving light and ventilation in all weathers.

Many factories today, though well lighted, are not equally well lighted, are not equally well ventilated.

This photograph shows one of the Steel Sash Departments of our own factory.

Its roof is a Pond Truss, both lighted and ventilated by unbroken lines of Pond Continuous Sash. Being hung from the top, instead of centre-pivoted, and having underlapping storm panels at the ends, these lines are weatherproof when fully open. Air enters by the side wall ventilating sash and goes out by the roof.

The Pond Truss was first designed for foundries and forge shops, where rapid air renewal is essential. But its combination of all-weather ventilation and remarkable lighting has caused it to be adopted also in many machine shops, etc., where personal efficiency is important.

Our booklet, "Air, Light, and Efficiency," tells how a number of famous factories have secured unusual results by unusual sash arrangements.

Let us help with your lighting and ventilating problems.

Lupton Products

- Lupton Steel Sash
  - Pivoted Factory Type
  - Counterbalanced Type for Factories
  - Counterweighted Type for Offices
  - Power House Type
- Pond Continuous Sash for Pond Truss, sawtooths, monitors and side walls
- Pond Operating Device for long lines of sash
- Lupton Rolled Steel Skylight
- Lupton Steel Partition and Doors
- Lupton Steel Shelving

DAVID LUPTON'S SONS COMPANY

Tulip and Westmoreland Sts., Philadelphia, Pa.

Makers of equipment for daylighting and natural ventilation

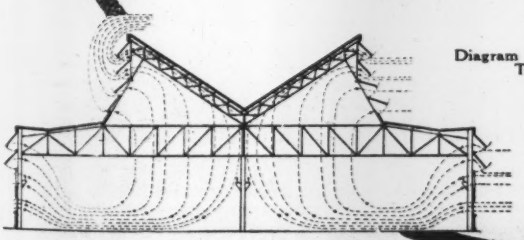

Diagram showing ventilation of typical Pond Truss building in a cross wind.

ANTI-HYDRO

FOR PERMANENT CONCRETE
HARDENS WATERPROOFS

Makes Concrete Permanently Hard and Absolutely Waterproof

ANTI-HYDRO hardens and waterproofs concrete integrally and does it while the concrete is being laid. No treatment is required after work is finished—no extra labor—no delay.

To add the two qualities to concrete which are so necessary—that of imperviousness to water and wear—use ANTI-HYDRO.

It both waterproofs and hardens concrete at the same time.

It accelerates the set of cement, but in no way weakens it.

It hydrates cement at 20 degrees F. It so reduces the labor of finishing concrete floors, walls, etc., that it pays for itself on every job.

Since 1904 Engineers all over the country have been depending on ANTI-HYDRO for their most efficient work. This extensive list of users is evidence of its merits—Send for it.

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SINGER BUILDING

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Meyer Steelforms

are essentially cold weather forms

Speed is the prime requisite in pouring concrete during the warmer days of winter. By using Meyer removable Steelforms, the greatest possible speed in erection is attained, with a minimum of form work. Temporary shores support the concrete joists after the removal of Meyer Steelforms, thus permitting their early removal and maximum re-use, *and consequent economy.*

When you use salamanders to lower the temperature, the heat from below is transmitted, by the Steelforms, directly to the concrete. Speed, plus absolute accuracy, plus economy, is a combination worth investigating.

Write for our Handbook.

CONCRETE ENGINEERING CO.

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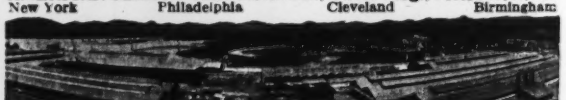

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Permanent Roof Lights See page 266 267 Sweets Engineering 1916

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Acid Resisting — **Non-Inflammable**

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DOMINION TRUST BUILDING,
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Architect: Helyer & Son
No. 232 "R. I. W." used on inside of outside walls.

Water as Destructive as Fire

THE damage wrought to steel and masonry by water parallels closely that done by fire. It is less evident, but just as certain. It behooves the modern builder to eliminate this factor by protecting his edifices with

R.I.W. REMEMBER IT'S WATERPROOF REG. U.S. PAT. OFF. **PROTECTIVE PRODUCTS**

"R.I.W." Tockolith (Patented) is a Portland cement paint unique in that it can be applied over incipient rust, which it checks instantly, preventing its spread.

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REMEMBER IT'S WATERPROOF
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STEEL NEED NOT RUST!
WOOD NEED NOT ROT!
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RANSOME

THE WAR!

It did not find us unprepared We had raw material on hand. The BANTAM LINE of MIXERS is practically U. S. Standard now. Contractors save money and time and there is no waste with the BANTAM!

Write us NOW!

Agents everywhere, let us send you names and catalogs.

Ransome Concrete Machinery Co.
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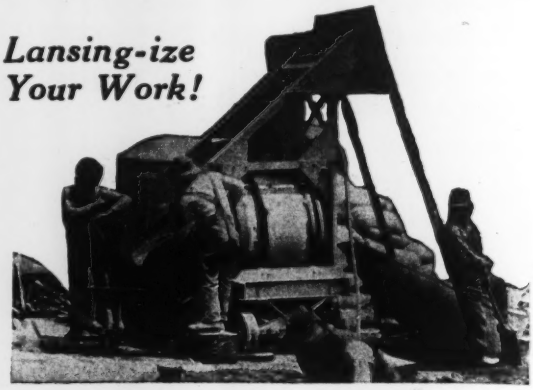
Lansing-ize Your Work!



Ask the OWNER Why!

Write, for instance, to Mr. Henry H. Soule, who built the big new plant of the Republic Truck Co., at Alma, Michigan. He bought one Lansing—then 3 more. Write us for data.

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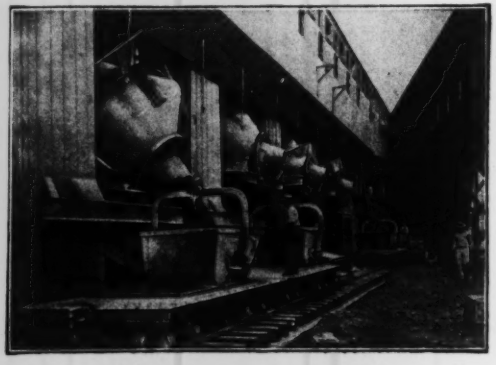
Warehouses in Principal Cities

Austin Cube Mixers
"the efficiency standard"



A battery of Austin Cubes used in construction of the Panama Canal

Where high speed and thoroughly mixed concrete are the requirements Austin-Cubes are found on the job.

The cube drum with its inside breaker rods, produces the most perfect mix, with the fewest number of revolutions—

The inside wearing plates of the cube drum are easily renewable, thus prolonging the life of the drum indefinitely—

Austin Cubes are made in sizes and capacities for every class of work.

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New York Office: 30 Church Street
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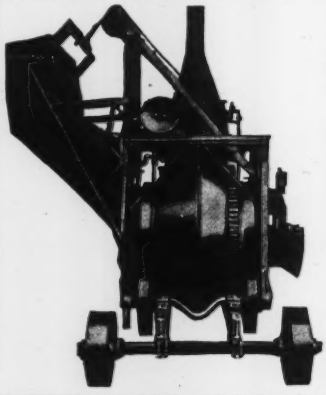

FOOTE Concrete Mixers

"The Repeat Order Mixer"

C. Foote Mfg. Co.
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STEEL BARS
FOR
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Manufactured by
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Designing and Constructing Engineers
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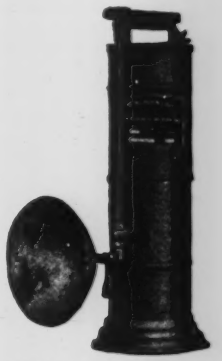
Office: Allentown National Bank Building ALLENTOWN, PA.

—introducing another new Milburn Type the "RELIANCE"



Body—7 in. by 25 in.
Weight Empty—17 lb.
Reflector—10 in. Diam.

A portable carbide light that gives

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12 Hours

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Complete

$30

A light that has absolutely no overgeneration—or aftergeneration. A light that burns ordinary lump carbide—carbide in its best and cheapest form, costing about $4.75 per 100 lb.

A light that can be set up quickly by any workman, that burns automatically, that is practically self-cleaning.

—and it doesn't need fresh water

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A wind-and-storm-proof, all-weather light that stands up out on the job and requires practically no attention—a light you can **rely** upon!

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requiring moderate illumination, but adapted particularly to the needs of Contractors and Builders; for Railroads, Mines, Ship yards; for Road-building, Sewerage, Waterworks; for any job requiring a powerful **light** concentrated within a limited area.

Write for booklet 21—or—Try one on *Your* job!

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Concrete for Permanence

"VULCANITE"—the Brand with a REPUTATION

THE CONCRETE HAND BOOK

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Write for FREE "Concrete Hand Book" —28 pages—telling you how to build of concrete

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Positively stop all leaks of steam, water, fire or oil in iron, steel or concrete.

They are easy to apply, harden quickly and make permanent repairs, proved by years in use.

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Flexibility of Construction Finds A Quick Solution in CONCRETE

Distribution of stresses, adaptability to any form, and resistance of all types of destruction make concrete the engineer's choice of building materials.

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"Homogeneous, FREELY FLOWING concrete"

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THE OLDEST MANUFACTURERS OF HIGH GRADE PORTLAND IN THE WORLD. EXTRA QUALITY ALWAYS

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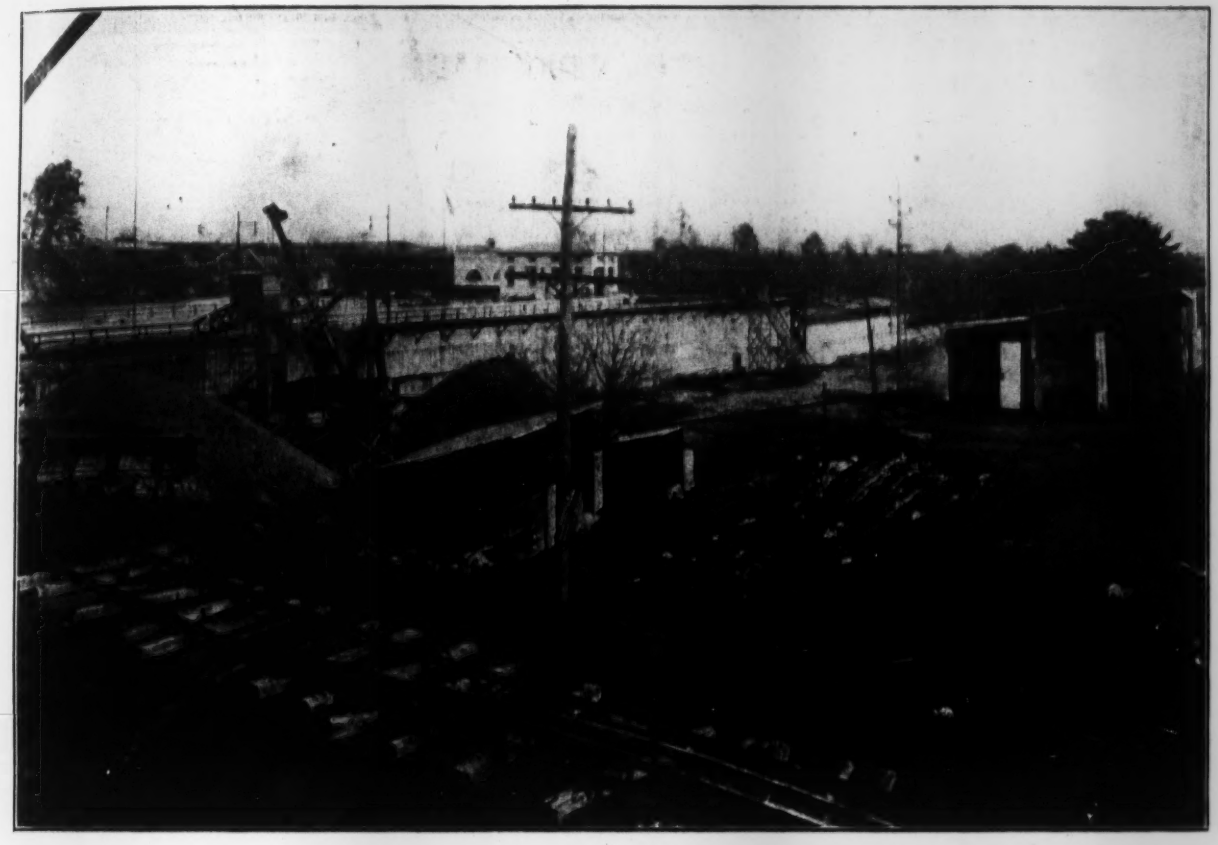


After the above Barge Canal Lock and Dam were built and subjected to a 26-ft. head, leaks developed under the lock walls. To locate these leaks we were engaged to drive a tunnel under compressed air entirely around the lock below the walls, grout seams in the rock and fill with concrete to form a cut off.

We are specialists on subaqueous problems of this kind.

Our scope also includes Dams, Power Houses, Industrial Plants, Bridges, Shoring and Underpinning and Heavy Building Foundations.

THE FOUNDATION COMPANY

NEW YORK CHICAGO PITTSBURGH SAN FRANCISCO

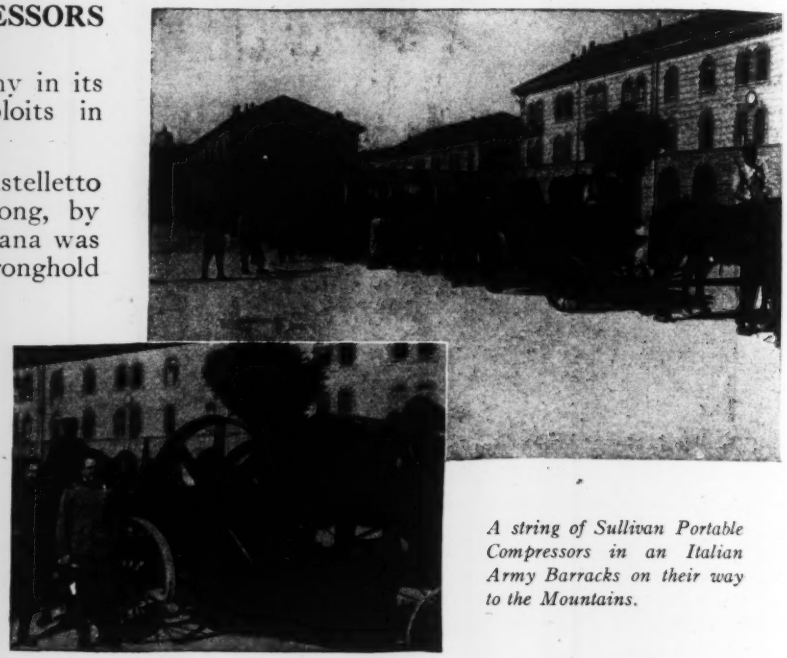
HELPING ITALY DIG IN—

SULLIVAN AIR COMPRESSORS AND DRILLS
are helping the Italian Army in its wonderful engineering exploits in the Alps.

One of these was the Castelletto Mine, a tunnel 800 feet long, by which a peak of Monte Tofana was blown up and an Austrian stronghold destroyed.

For rapid drilling and reliable service you can depend on Sullivan Drills and Sullivan Air Compressors, whether in civil or in military rock removal.

Ask for Bulletin 458-O



A string of Sullivan Portable Compressors in an Italian Army Barracks on their way to the Mountains.

SULLIVAN MACHINERY CO., 124 South Michigan Ave., Chicago, Ill., U. S. A.

SPEEDING UP ROAD BUILDING

An I-R Portable Air Compressor and Jackhamer drills will speed up rock excavation to such an extent that the contractor, having work of this kind, cannot afford to overlook the saving to be effected.

One report from the field states that two Jackhamers are putting in from 300 to 400 feet of hole per 10-hour day at a cost of less than 5 cents per foot. These holes range from 1 to 10 feet in depth and are drilled at almost any angle. The portable compressor is an I-R "Imperial" Gasoline Driven Outfit.

Bulletin 4221 describes the Jackhamer

Bulletin 3015 describes I-R Portable Compressors

Ingersoll-Rand Company

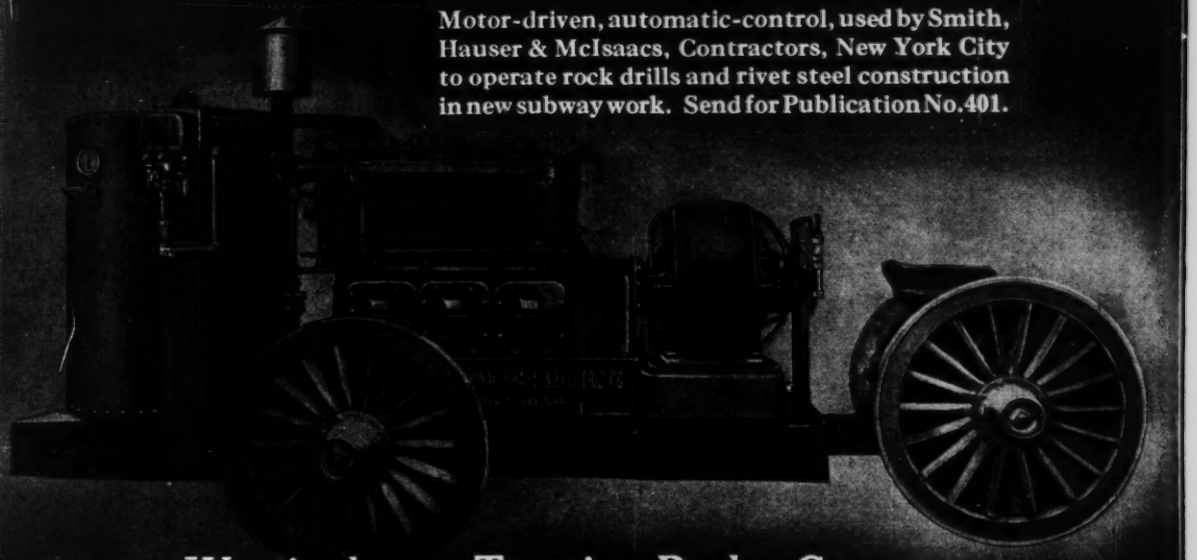
Broadway New York *Offices the World Over* **165 Q. Victoria St. London**

Leyner Drill Sharpeners **"Little Tugger" Hoists**

108 J-D

National Portable 3VS Air Compressors

Motor-driven, automatic-control, used by Smith, Hauser & McIsaacs, Contractors, New York City to operate rock drills and rivet steel construction in new subway work. Send for Publication No. 401.



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General Office and Works, Wilmerding, Pa.

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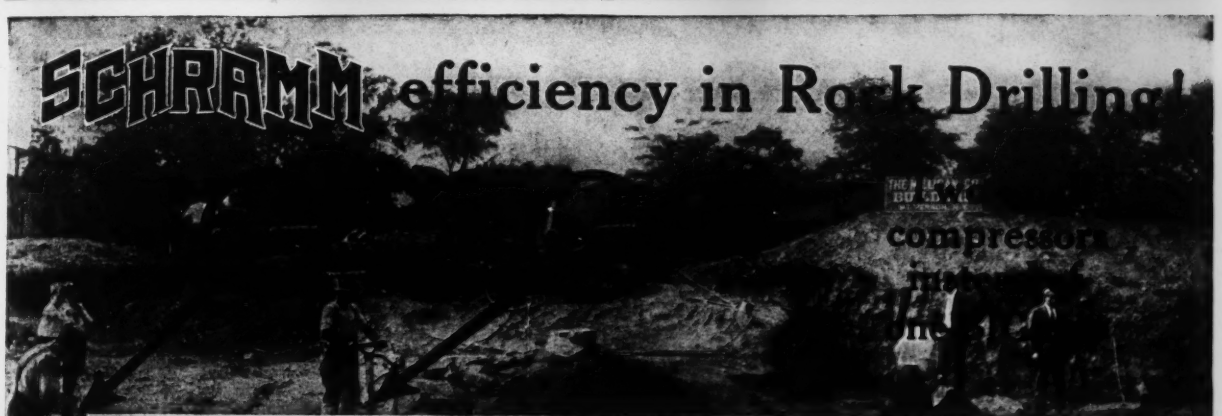
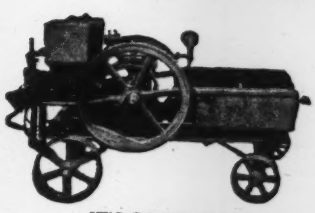


FOR ALL WATER WORKS EXCAVATIONS

Whether you are building a new reservoir or filter plant, laying water mains, riveting stand pipes or require a dependable field supply of compressed air for any purpose, you can save money by using

The SCHRAMM Portable Air Compressor



IT'S PORTABLE

1.—Absolutely dependable.
2.—Very economical in gasoline.
3.—Direct connected. No power lost through belting or gears.
4.—Readily portable from place to place.
5.—Very rigid and carefully aligned with low center of gravity. Extremely durable.
6.—Available for straight power purposes when not used for air.
7.—A liberal free trial allowed to prove every claim.

Write for interesting Catalog. Visit our New York City or Philadelphia Show Room.

CHRIS. D. SCHRAMM & SON

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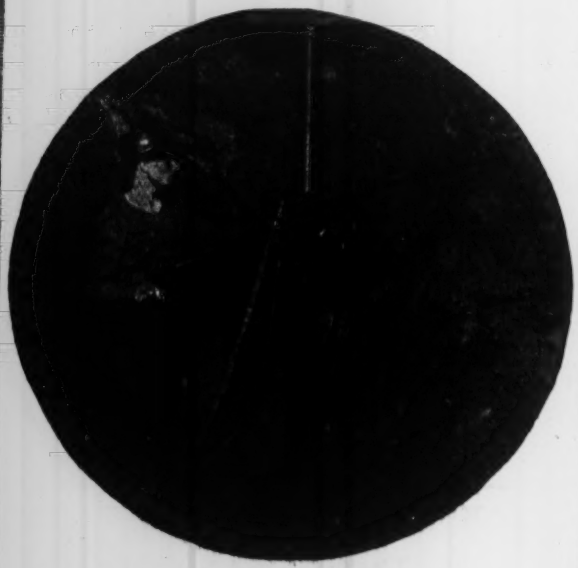
THE WAUGH "DREADNAUGHT"

The superiority of this drill is being continually demonstrated. Its rapid drilling power and ability to stand up under the heaviest service have established for it an unequaled reputation for efficiency.



Shenandoah, Pa., Nov. 27, 1917

Denver Rock Drill Mfg. Co.,
30 Church Street,
New York, N. Y.

Gentlemen:

I have had two of your Dreadnaughts since May, and during the past few months I have done the following work: 260 feet 10 x 7 tunnel, conglomerate rock, very hard. It took me 44 days at 6 hours per day. I have put in 4—10 ft. holes and 14—9 ft. holes each day. Also, I drove 400 feet 10 x 7 tunnel, slate and sandstone. It only took 57 days, and we only worked 3 hours per day. I have put in 4—10 ft. holes and 14—8 ft. holes each day. I am giving this information because I am well pleased with your drill, and it only cost me about $20.00 in repairs, some water tubes, a few arm bolts, and one chuck driver, and in a short time I will be the owner of a few more of your Dreadnaughts. I have done this work at Potts Colliery for the Philadelphia and Reading Coal and Iron Co.

Yours very truly,
Jenett Sylvester,
Rock Contractor.

THE Denver Rock Drill Mfg. Co.

DENVER, COLO.

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Canadian Rock Drill Company, Ltd., Selling Agents
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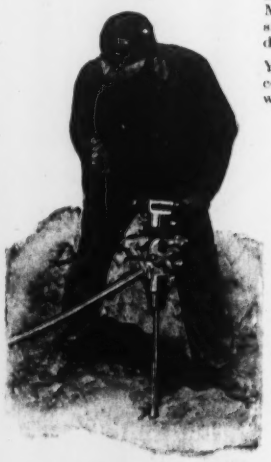
F-26

There's nothing better for chipping out old masonry than a "BUSY BEE"



There's many a situation where you want to take out piers or concrete foundations or other masonry inside or near buildings. You can't blast—and hand-work is too slow and expensive. Here's where McKiernan-Terry "BUSY BEES" step in and save you days and dollars.

You'll find that most of the biggest contractors handling foundation work use them.

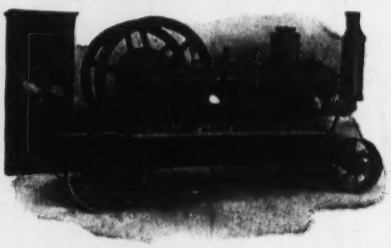
Send for BULLETIN.

McKiernan-Terry Drill Co.
235 Broadway
New York, N. Y.

Foreign Representatives: British Steel Piling Co., London, Eng. Canadian Representatives: Canadian Allis-Chalmers, Ltd., Toronto, Ont.

Rock Drills, Core Drills, Hammer Drills, Atlas Jacks, Pile Hammers

PORTABLE AIR COMPRESSOR



The tank mounted **Chicago Pneumatic Gasoline Engine Driven Compressor** brings the air to the job, at very low cost. Is direct connected, automatically regulated, self-contained and has independent cooling system. Can also be furnished to operate on Gas or Fuel Oil, and can be furnished skid mounted if desired for semi-portable work.

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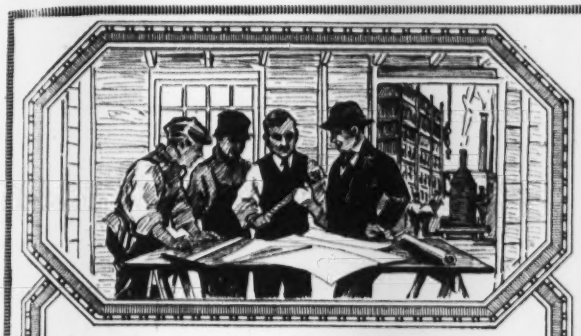
THE NORWALK IRON WORKS CO.
South Norwalk, Conn.
MAKERS OF
AIR AND GAS COMPRESSORS
of any volume and any pressure

RELIANCE EQUIPMENT

Complete Crushing Plants
Road Oilers
Road Scarifiers
Street Sweepers

Universal Road Machy. Co.
KINGSTON, N. Y.
Branch Offices: Boston—Harrisburg



This is Real Hose

That is what is said by [illegible] who have the handling of American Metal Hose [illegible] When the construction is finished they know that they owe much to

AMERICAN METAL HOSE

American Metal Hose

because it has saved the [illegible] damage and possible injuries which there might [illegible] been had they used just ordinary hose.

Steam won't burn it, oil won't rot it, it is so flexible that it will meet all requirements. It is so built to stand the wear and tear of the hardest construction jobs, and is daily doing so successfully

THE AMERICAN METAL HOSE CO.

Waterbury, Connecticut

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Steel for Service

The success of a contractor in connection with a specific job, or a great number of jobs covering perhaps his whole contracting career has depended largely upon his judgment in his selection of tools to carry on the work.

Many a contractor would have saved money on excavation work had he used steel sheet piling.

The use of

United States Steel Sheet Piling

in many cases would have turned a loss into a profit.

The pamphlet—Steel Sheet Piling—contains valuable data and can be obtained from any district office.

The mark of quality [illegible] It protects the user

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General Offices—Pittsburgh, Pa.

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CONCRETE PILING

FOUNDATIONS—SPECIAL CONCRETE MASONRY
PILING—CONCRETE, STEEL, WOOD
SIMPLEX CONCRETE PILING METHODS

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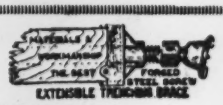
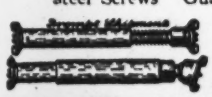
Simple, Strong, Extensible, Forged Steel Screws Guaranteed.





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For Driving Sheet Steel Piling, Wood or Concrete Piles, Use

The National Pile Hammer

Here's a double-acting hammer with **only four moving parts**—a hammer that does **all kinds** of pile driving—a hammer that gives maximum service with minimum upkeep—a hammer that

Uses Either Steam or Air With Maximum Economy

—a hammer that is built out of **solid stuff** by practical men for practical men—**in short** a hammer that **makes good** all along the line. If interested in that kind of hammer **write.**

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LATEST DESIGNS Orders filled day received
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Special apparatus built to order

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are ideally constructed to resist digging shocks—With an Austin you're assured of continuous service under the most difficult conditions.

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Formerly F. C. Austin Drainage Excavator Co.
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Strictly a Contractors' Shovel. Revolving Type. Handy to operate. Quick in accomplishment. New catalog. Send for it.

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Note that the carriage can be operated on an underslung boom. Let us turn your derrick into a steam shovel.

Details await your request.

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LADDER TYPE TRENCH EXCAVATORS—DRAINAGE EXCAVATORS
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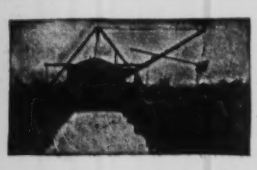

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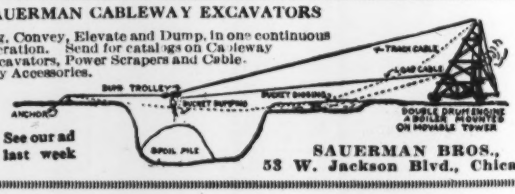
Spans the cut. Built any width. Steel construction. Two men can operate. Equipped with oil engine. Ideal for clean out work. *Write for details.*

Bay City Dredge Works
2601 Center Ave. Bay City, Mich.

SAUERMAN CABLEWAY EXCAVATORS

Dig, Convey, Elevate and Dump, in one continuous operation. Send for catalogs on Cableway Excavators, Power Scrapers and Cable Way Accessories.



See our ad last week

SAUERMAN BROS.,
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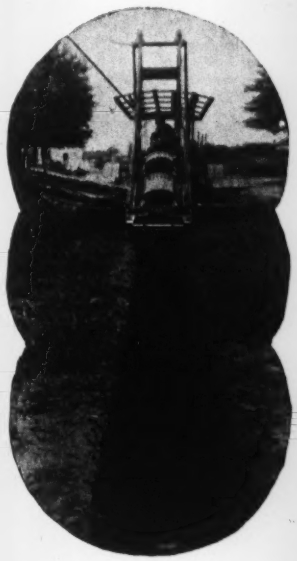
Built for tough digging

Hard clay, boulders, gumbo, cobbles, concrete road surfaces make just "ordinary" digging for the

BUCKEYE

Traction Ditcher



Built to cut trench excavation costs, the BUCKEYE accomplishes more than 100 men at 1/10 of the cost of hand labor. It digs a perfect trench in one cut—vertical sides and smooth bottom—true to grade and ready for pipe laying, etc.

The BUCKEYE is built rugged and stands up on the hardest kind of work with fewest repairs.

Let us send you data which shows how the BUCKEYE cuts costs on hard jobs.

Write today and be convinced.

BUCKEYE Traction Ditcher Company
Findlay, Ohio

Marion

Steam Shovels, Dredges, Draglines and Kindred Machinery

IT takes a hard, impervious clay to build an earth dam that will serve permanently—and it takes a regular steam shovel to dig it at profitable speed. But H. W. Golden & Son, Inc., of Troy, New York, were using a "Marion," so it was all right!

50,000 YARDS HARD MATERIAL —No Repairs But Dipper Teeth

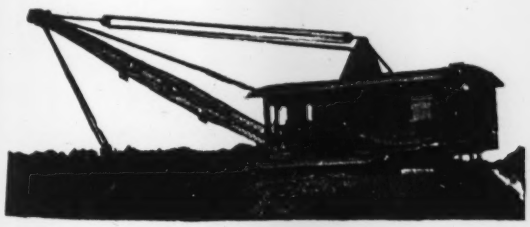
The digging, consisting of hard-pan mixed with stone, proved much harder than expected—and stormy weather caused the loss of one-third to one-half of the total time; yet this "Marion" averaged over 300 yards per day, straight through, finishing up to the owners' great satisfaction.

Carrying the emergency load smoothly and evenly is a part of "Marion's" regular day's work. Ask us for particulars—no obligation to you.

The Marion Steam Shovel Company, Marion, Ohio

Branches: Atlanta, Chicago, New York, Philadelphia, San Francisco, Seattle

216 ESTABLISHED 1884



The Walking Traction

A feature exclusive to Monighan Excavators which the contractor must see in action but once to appreciate.

Over any ground—soft, muddy or rough, it "walks"—the excavator without planks, skids, track or trackmen.

Labor cost is cut, more material handled and the whole job speeded up.

Catalog No. 17 explains these advantages in detail. With it we will send you the name of the user nearest you.

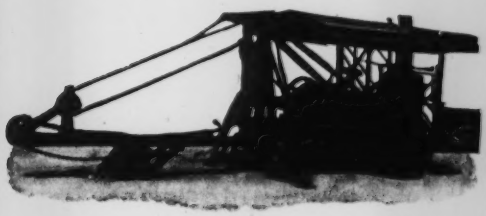
Monighan Machine Co.
2024 Carroll Avenue, Chicago, Ill.

KEYSTONE

Road Grader
Bank Dipper
Ditcher
Cellar Digger
Back Filler

5 in 1

Don't buy 40 tons of equipment if one *Keystone* 10-ton Traction Shovel will take care of all your work.



THE machine is sturdily built and will stand up to hard digging in cemented gravel, shale or old macadam. At the same time it is unusually light (10 tons), has a long wheelbase (10 ft.), with 54-inch tread-wheels and wide tires. No planking necessary on dry ground. Puts minimum strain on light bridges.

Skimmer and Dipper Scoops hold one-half yard. Loads 1½ yard wagon in 1½ minutes. Average daily output 250 to 400 cubic yards. Has dragline ditcher scoop for trenches, cellar digging, back-filling, etc. Ditching capacity 150 to 300 cu. yd. per day. Excavates to a depth of 20 ft.

The eleven-foot horizontal crowding movement and powerful thrust make it more efficient than other machines for shallow grading in hard material.

Saves you money in first cost, operating and moving charge, and upkeep.

Write nearest office for catalog, prices and list of near-by owners.

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Keystone Well Drilling Machines Downie Deep Well Pumps

STEAM SHOVELS

LIDGERWOOD HOISTS

High Speed Hoists for Operating Coal Towers

The important factor in the operation of a coal tower is the hoist.

The speed of operation is determined by the speed of the hoist. Lidgerwood hoists have the speed.

Their design, material and workmanship minimize the possibility of delay due to breakdowns.

HOISTS—STEAM, ELECTRIC, GASOLINE FOR ALL HOISTING SERVICE

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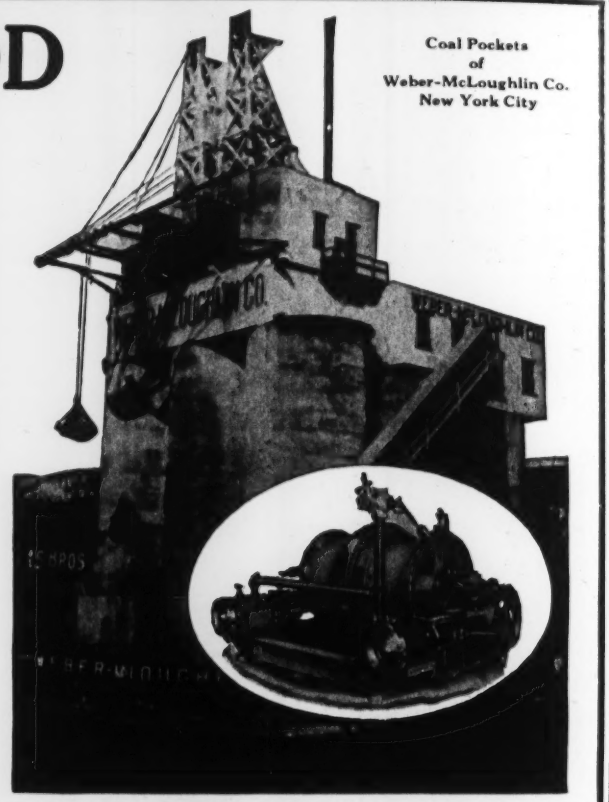

Coal Pockets of Weber-McLoughlin Co. New York City

Economical Excavation

is made possible by this Flory two-speed, band-friction, drag-line hoist. Two Werner Patent Band Frictions. Operated by steam; 60-hp. Motor. Operating levers all placed within easy reach of the operator.

Our booklet gives the full description—send for a copy.

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BUFFALO HOISTS AND DERRICKS

The efficient handling of materials or equipment in shipyards, industrial plants, on construction work, etc., is largely a matter of Hoists and Derricks. Our 35 years of experience in building steam, gasoline and Electric Hoists as well as Derricks, Derrick Fittings and Hand Winches, assures you of more than ordinary results.

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CLYDE HOISTS

insure the latest and best practice in hoisting.

They are expressly designed for the busy contractor. More material can be hoisted per day at less cost for operation and repairs.

Regardless of the severity of your requirements we can furnish you with a Clyde that will satisfy every demand.

Write for full details.

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THE JORDAN SPREADER IS A WONDERFULLY EFFICIENT SNOW PLOW

"Its powerful wings are capable of withstanding tremendous pressure"

The wings may be adjusted to numerous positions to meet varied conditions—Flanger Blades on the lower edge of the plow, flange out either snow or solid ice to a depth of two inches below the top of the rail.—The Jordan does this work so thoroughly that no follow-up crew of hand labor is necessary.

For clearing Freight Yards the Jordan Spreader has no equal. The wings may be arranged to carry the snow across the track and deposit on opposite side if desired.

One man and the train crew are all that are required to operate the Jordan.—It's ready for service day or night,—will work twenty-four hours per day if necessary, **and above all will get results in the shortest time possible.**

The above photograph shows the Jordan on the Bingham & Garfield Ry. in Utah. Last Year's Snows in this section were the heaviest in years. Throughout the winter the Jordan was an immense success in keeping the track clear of snow.

"Does the work of an Army of Men"

Spreads any bulk material 21 feet each way from the center line of track, above or below the rails.

Write or wire for information

O. F. JORDAN CO.

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The Jordan Spreader is made entirely in our own shops.—We can guarantee deliveries.

Byers Auto-Cranes
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Ask for Bulletin 1007
THE JOHN F. BYERS MACHINE COMPANY
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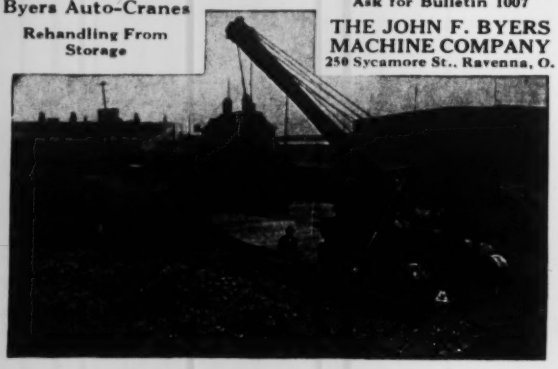
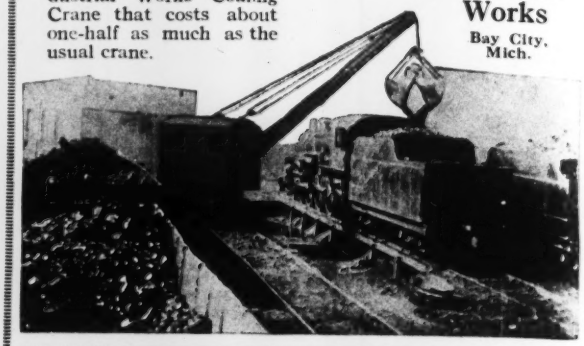


A gasoline operated Industrial Works Coaling Crane that costs about one-half as much as the usual crane.

Industrial Works
Bay City, Mich.



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Type "R" Electric Crane Trolley
All gears totally enclosed, running in oil.

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Complete Foundry Plants

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HARVEY-ILL U.S.A.

Cranes of All Types

This Photo shows where a 1½-yard

Fogarty Excavating Bucket

replaced a dipper dredge.

Ask the Bay State Dredging Company of Boston, Mass. Then write for our catalog and full particulars.

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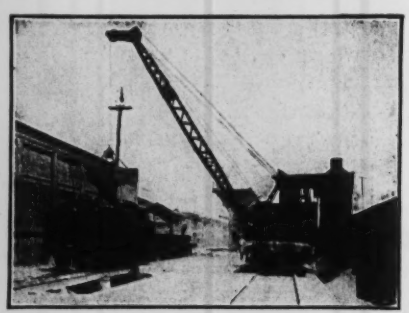
—In difficult work the—
O. S. Locomotive Cranes and Buckets
Insure satisfaction.



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Right Material
Superior Fabrication

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THE ADEN GRAB BUCKET

The Aden Bucket

A New Design in Engineering

which makes for more and better work—no matter how tough the job.

Stop Picking
Pick the Aden

Write for specifications

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Wrecking Cranes, Railroad Ditchers, Revolving Steam Shovels, Pile Drivers, Buckets
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4 Buckets a minute is its record. A lightweight, broad-gage machine for Ditches, Highways, Stripping, Loading and Unloading Material, Laying Sewer Pipe and Tile.

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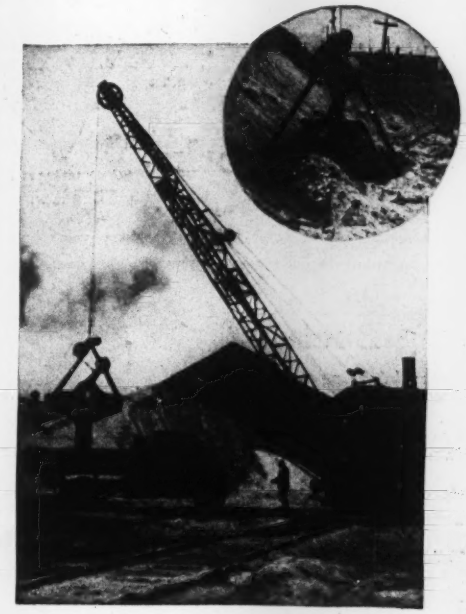
Successor to Gade Excavator Co.

11 Years Old and Still Young



This Williams 1½-yd. Type "B" Bucket started to work for the Erie Sand & Gravel Co. at Erie, Pa., in 1906. The picture shows it on March 3, 1917. This company uses Williams Buckets exclusively.

Williams Bucket

"Built to Dig and Last While Digging"

They live up to their name. They are built to give constant service. Built with large bearings and with well-guarded cables. They hold their alignment and stand the gaff in all kinds of digging and handling.

Special types to suit your work.

Write for the latest Williams Catalog.

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Erie, Penna.

Owen Buckets

meet every material re-handling requirement. Their adjustable features of weight and closing power make them equally efficient in loose material in the stock pile as in packed material in cars.

All bearings lubricated and protected from dirt and grit.

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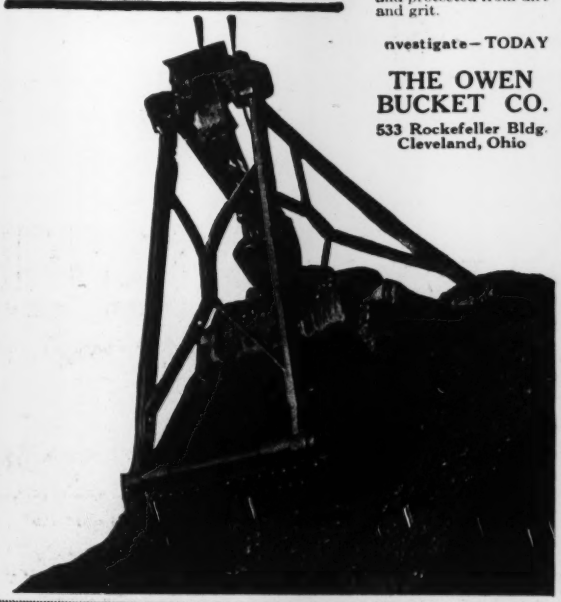

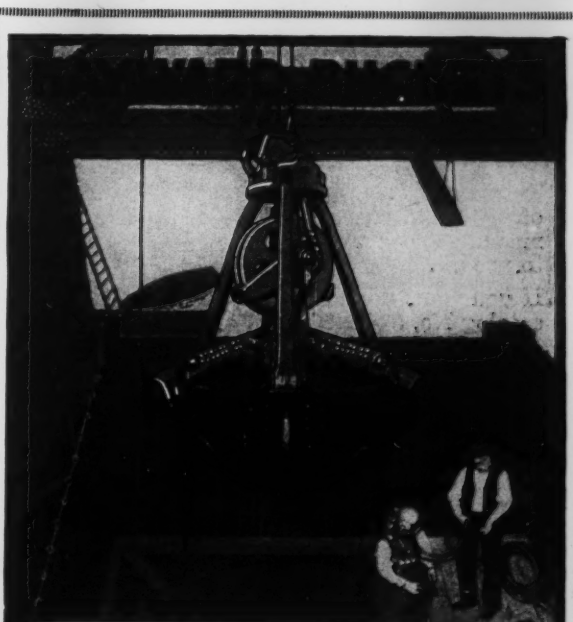

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Hayward Buckets have been employed on many of the largest bridge building and waterworks projects in the country. Wherever the best, the most efficient, and most economical equipment is used Hayward Buckets predominate.

Choice of Clam Shell, Orange Peel, Drag Scraper and Electric Motor Buckets. **Catalog 43.** 2428-Y

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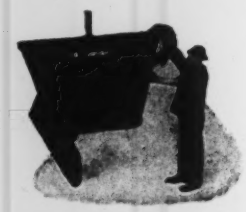
Controllable Bottom Dump Bucket (Patented)

The full Stuebner line consists of Coal Hoisting, Mining, Excavating and Bottom Discharge Buckets — Steel Skips — Side and End Tip, Rotary Dump, Drop Bottom and Boiler Room Cars—Asphalt, Tar and Lead Melters, Hand Dump Carts, etc., etc.

Big Handling Capacity

and extreme durability are the foremost features of the



"Excelsior" Bottom Dump Concrete Bucket (Patented)

STUEBNER Hoisting Buckets

These steel buckets positively excel in efficiency. They effect a large money saving to the contractor on all work involving the handling of bulk material. *Write for Catalog "N."*

"Invincible" Bottom Dump Bucket (Patented)

Consult us on any bucket problem.

Self-Dumping and Self-Righting Turnover Bucket

G. L. Stuebner Iron Works

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Single Closing Sheave Orange Peel Dredging and Excavating Bucket

The construction of this bucket is most substantial, being made of homogeneous steel plate of 60,000 pounds tensile strain. Bearings are steel bushed, removable and easily replaced.

The four blades which form the main body of bucket are made extra heavy, with the points reinforced and welded, insuring well-hardened points for penetration.

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All sizes in stock for immediate shipment. We build buckets of all types.

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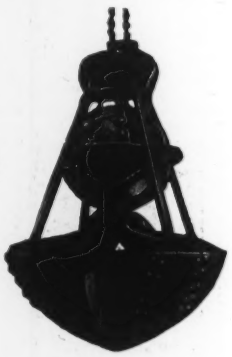

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HAISS "High Power" BUCKET

digging iron ore at Berkshire Iron Works, Sheridan, Pennsylvania.

They say: "It is the best bucket that we know of. We have an ordinary clam-shell bucket made by another concern that we were unable to use at all."

If you want a bucket that will dig, write for catalog No. 614 NOW.

GEORGE HAISS MFG. CO., Inc.

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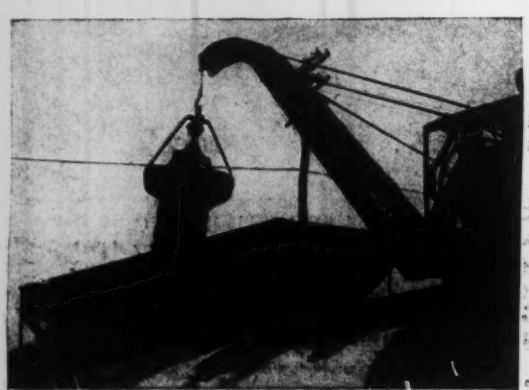

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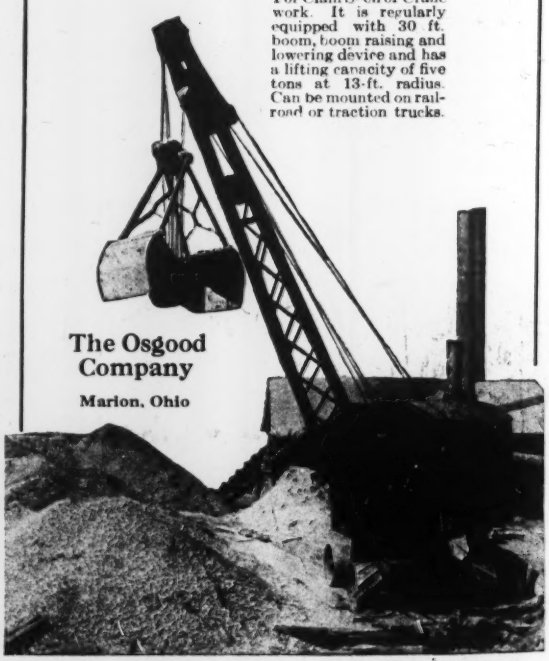

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FOR elevators, dredges, lumbering, mining, oil-well drilling, suspension bridges, stump-pulling, cranes, derricks, ships' rigging and every other form of wire rope use.

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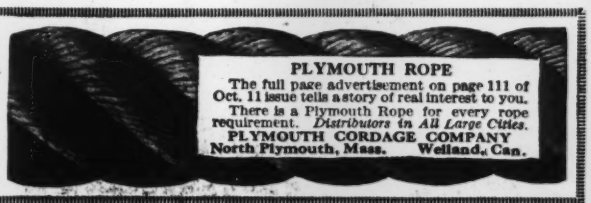
Excelsior Wire Rope

is the dependable Wire Rope—for all purposes. It is manufactured under scientific methods that guarantee maximum *safety, strength, durability* and *flexibility*.

Wright Wire Company
Worcester, Mass.



PLYMOUTH ROPE
The full page advertisement on page 111 of Oct. 11 issue tells a story of real interest to you.
There is a Plymouth Rope for every rope requirement. *Distributors in All Large Cities.*
PLYMOUTH CORDAGE COMPANY
North Plymouth, Mass. Welland, Can.

ROEBLING

WIRE ROPE AND WIRE

John A. Roebling's Sons Co., Trenton, N. J.

The End of the Calendar Year

This week sees the end of another year. Another twelve months have been written into the history of water supply.

The year has seen a greater number of water-works creep closer to their ultimate ideal of absolute efficiency. Once having started, the movement towards efficiency gains headway gradually—adding to its speed each year.

The entrance of this country into the war, and its consequent lesson that the nation in all its branches requires more efficiency, more *exact knowledge*, has given an added impetus to the movement.

The water-supply field is accounting for more of the water it pumps. And it is being paid for more. It is installing more water meters to *insure* that it will be paid for all the water supplied.

And it is insisting more and more that *better* meters be installed. Its viewpoint is that differences in continuous accuracy, durability and maintenance-cost obscure as an insignificant trifle the necessary difference in first-cost.

More TRIDENTS are being installed!

More than a million and a half now in service!

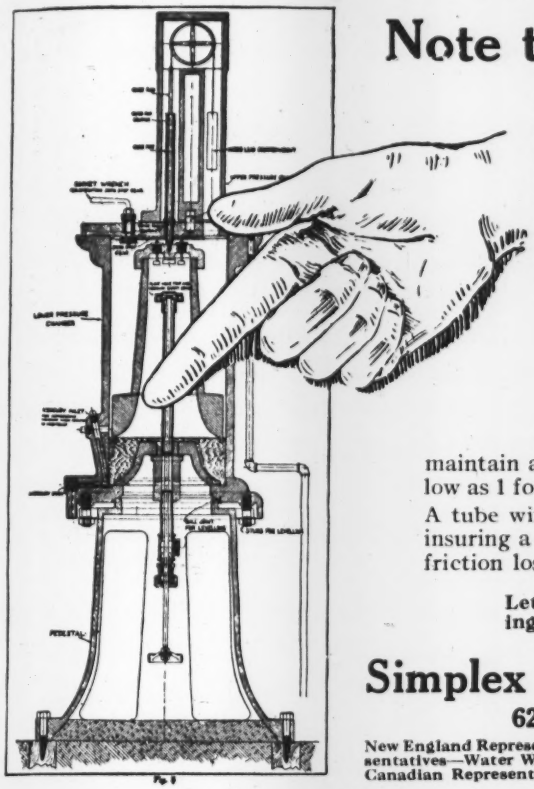
NEPTUNE METER COMPANY

Manufacturers of Trident Water Meters—The Weber Subterranean Pump

50 East 42nd Street, New York City

BRANCHES:

Chicago Atlanta Boston Los Angeles San Francisco
Portland Denver Cincinnati Seattle



Note the Simple Direct Action

The movement of the indicator pointer and the recording pen arm takes place directly from the specially shaped float which rises and falls in the mercury in exact proportion to the flow through the meter tube in the pipe line.

There are no intervening cams, links, levers, gears or racks to cause inaccuracies due to friction, back lash or lost motion.

That is why the

SIMPLEX WATER METERS

maintain an accuracy exceeding 99 per cent. down to flows as low as 1 foot per second through the Venturi tube throat.

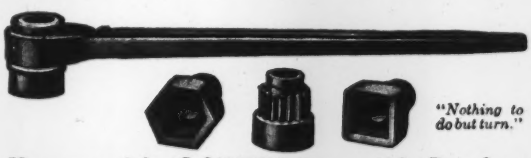
A tube with a wide throat area may therefore be employed, insuring a positive saving in pumping cost due to the reduced friction losses.

Let us advise you on any water, air or gas measuring problem. Write for Bulletin No. 113.

Simplex Valve & Meter Company

625 Wood Street, Philadelphia, Pa.

New England Representative—Geo. W. Stetson, 141 Milk St., Boston, Mass. Pacific Coast Representatives—Water Works Supply Co., San Francisco and Los Angeles.
Canadian Representatives—Francis Hankin & Co., Montreal, Toronto and Vancouver.



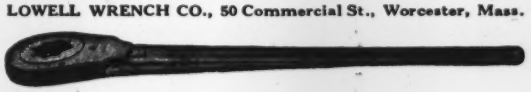
"Nothing to do but turn."

Your need for LOWELL Reversible Ratchet Wrenches is urgent

If you can use the safest, surest and quickest ratchet wrench on the market—A wrench particularly adapted for use on bridge work or other jobs where nuts have to be seated or removed in a cramped space—

Send for Catalog R which give the full story of the Lowell Reversible Ratchet Wrench, TODAY.

LOWELL WRENCH CO., 50 Commercial St., Worcester, Mass.



NEW YORK CHICAGO

Keystone and Eureka

Water Meters

COLUMBIA S.C. ANSONIA

Pittsburgh Meter Co.

East Pittsburgh, Pa.

LOS ANGELES SEATTLE

IRRIGATION METERS

The Reliance Irrigation Meter is of simple construction, low in cost, always accurate, easily read. There are no bearings under water, no clocks, no ink or pencil or paper. Registers by same method as ordinary house meter.

Ask for the Booklet.

Hydrometric Company

108 West 6th Street Los Angeles, Cal.

DE LAVAL STEAM TURBINE CO.

TRENTON, N. J.

Builders of TURBINE MACHINERY, including Steam Turbines of all capacities for high or low-pressure steam and for direct connection or for belt or rope drive. Complete Turbo-Generator Sets. Centrifugal Pumps for all Heads and Capacities. Centrifugal Blowers and Air Compressors. Double Helical Speed Reducing Gears.

Write for special bulletins on apparatus in which you are interested.

IF YOU DO NOT FIND WHAT YOU WANT

in the NEWS-RECORD, write us and we will try to get it for you.

65

Sluice Gates
Gate Valves
Butterfly Valves
Fire Hydrants

Coffin Valve Co.

BOSTON, MASS.

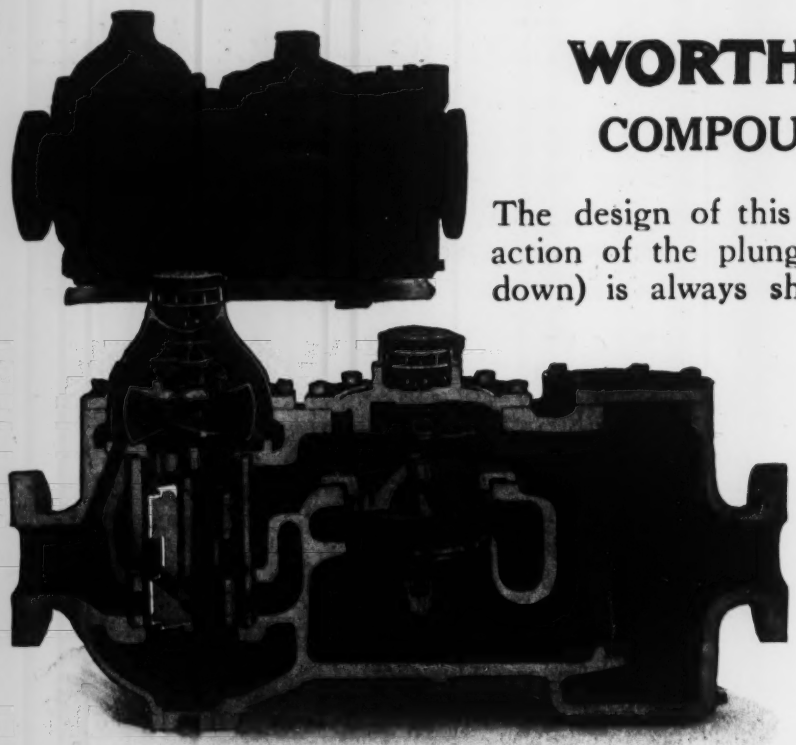
Makers of the Largest Sluice and Gate Valves in America.

Check Valves
Flap Valves
Foot Valves
Sewer Gates

Hydraulically, Electrically and Hand Operated Gate Valves and Sluice Gates

For Waterworks, Power Plants and Filtration Systems

Write for Catalog

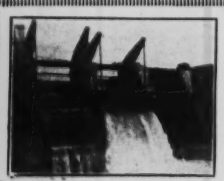


WORTHINGTON
COMPOUND METER

The design of this meter is such that the action of the plunger valve (both up and down) is always sharp and positive; "no breaking point" in the registration where the flow changes from the disc to the turbine meter, or vice versa, when the point of change is reached.

Send for Catalog W809-42.

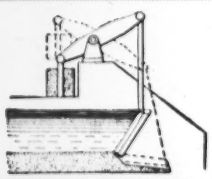
Worthington Pump and Machinery Corporation
115 Broadway, New York
Works: Harrison, N. J.
W375-4



BEST RESULTS BY NUMEROUS AMERICAN AND EUROPEAN INSTALLATIONS

AUTOMATIC GATES
American patents controlled by the owners, BARRAGES AUTOMATIQUES S.A., ZURICH, SWITZERLAND
FARGO ENGINEERING CO., JACKSON, MICH.
Eastern American Representative
Agents wanted in the Western States.

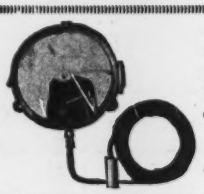
FOR THE CONTROL OF WATER LEVEL — MANY STYLES



KENNEDY VALVES
for handling water, gas, oil, steam, etc. For high pressures and low. Prompt shipment from stock.
THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.
81 John Street, New York — French Savings Bank Bldg., San Francisco

SLUICE GATES
Shear, Flap and Butterfly Valves
FLEXIBLE JOINTS
COLDWELL-WILCOX CO
NEW WINDSOR NEWBURGH N.Y.

Nicholas Engel
JOHN FOX & CO.
Cast-Iron Water, Gas and Flange Pipe, Special Castings, Fire Hydrants, Valves, General Foundry and Machine Work.
253 BROADWAY NEW YORK CITY



Gives a Record Chart of varying depths for RIVERS, SEWERS, HARBORS, WELLS
Used and approved by Boston, Chicago, New York, Philadelphia and many corporations.
Sold on approval.
SANBORN COMPANY
79 Sudbury Street, Boston, Mass.

CHAPMAN VALVES

Chapman Service

comprises full cooperation with waterworks engineers. Tell us what you need—we'll help design and build the valves.

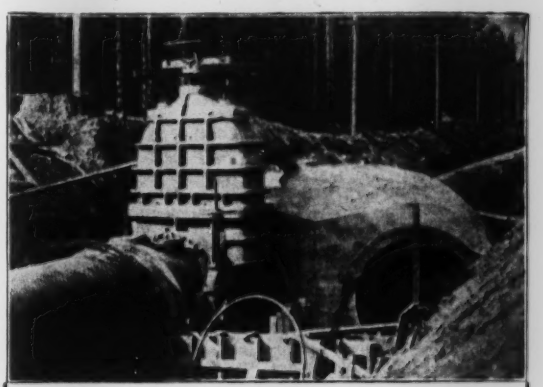
The Chapman Valve Mfg. Co.
Indian Orchard, Mass.

Branch Offices and Agents with Stock in Principal Cities

MICHIGAN PRODUCTS

Fire Hydrants	Shear Valves
Gate Valves	Tide Valves
Sluice Gates	Sleeve Valves
Check Valves	Indicator Posts
Foot Valves	Valve Boxes

Flower-Stephens Mfg. Company
107 Parkinson St., Detroit, Michigan



This big valve

regulates water for different units so that repairs may be made without interfering with the running of the generators in the power house.

It is a

CRANE

72 inch Standard
Iron Body Wedge

GATE VALVE

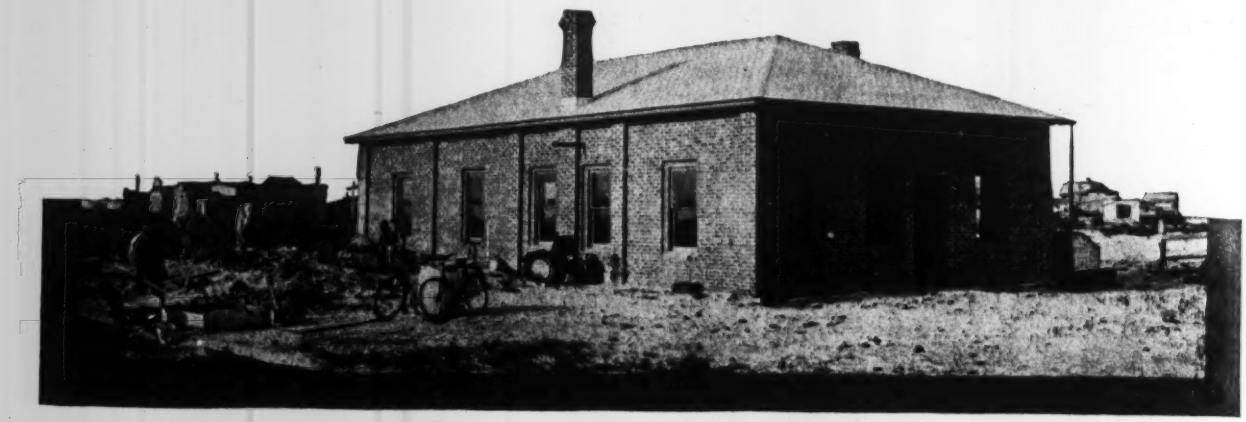
used under a hydraulic working load of 125 pounds per square inch, with a large factor of safety. Weight 26 tons.

Our new catalogue No. 50 describing our entire line of 17,000 articles, is now ready for distribution.

Branches in 53 leading cities

FOUNDED BY R. T. CRANE, 1855
CRANE CO.
836 S. MICHIGAN AVE.
CHICAGO

Works: Chicago and Bridgeport



This Sanitation R-W Process Sewage Treatment Plant is Located Near Summer Resort Buildings

No Nuisance Experienced

The Sanitation R-W Process provides for immediate treatment of fresh sewage. It can therefore be located in the heart of inhabited districts and is often the means of saving long pipe lines.

The Sanitation Process can be housed in a small building—it is a concentrated, efficient, sewage treatment process.

Write for our large descriptive bulletin G-4 with full particulars.

THE SANITATION CORPORATION, 50 CHURCH STREET, NEW YORK

Use

Liquid Chlorine

To Sterilize Your Water Supply

It is the most efficient sterilizing agent

BUT

control it with

"W&T"

APPARATUS

Send for Technical Publication 1 R with full details

Wallace & Tiernan Co., Inc.
137 Centre St., New York City
Chicago San Francisco

PURE WATER AT LOW COST

Pittsburgh filters develop the lowest operating costs consistent with thorough purification.

Each plant is installed after a study of local conditions.

Write us fully what your requirements are, PER HOUR; what the water is to be used for. Give a description of the arrangement of your plant and space, and as complete information as possible as to character of water to be purified.

We will advise you.

PITTSBURGH FILTER MFG. CO.
PITTSBURGH, PENNA.
CHICAGO KANSAS CITY

"COREY" FIRE HYDRANTS

Valve Boxes Indicater Posts Air Valves

"RENSSELAER" VALVES

All Sizes All Pressures All Purposes

Rensselaer Valve Co., General Offices, Troy, N. Y.
New York, Hudson Terminal, Church St. Chicago, Monadnock Block
Pittsburgh, Oliver Building Seattle, Colman Building
New England, Chas. L. Brown, Northboro, Mass.

SLUICE GATES, CHECK VALVES, INDICATOR POSTS, ETC.

OUR LINE

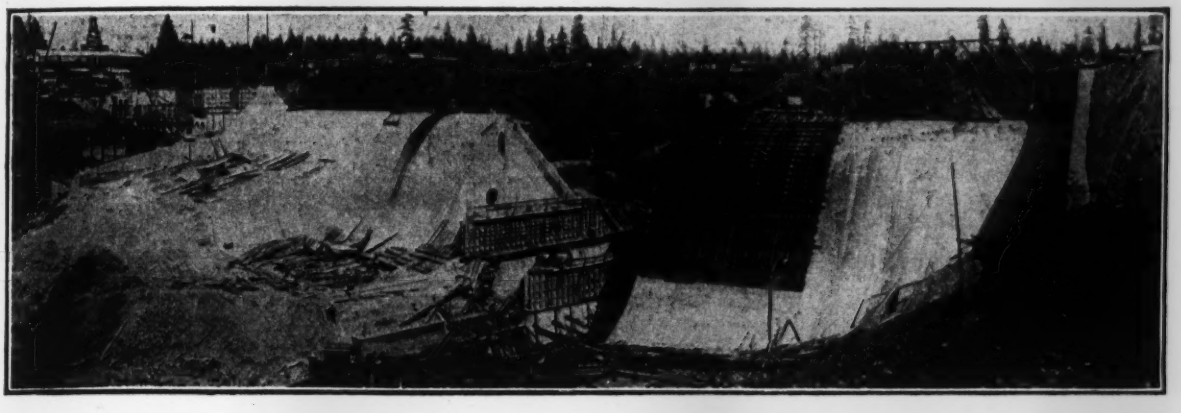
GATE VALVES **EDDY** FIRE HYDRANTS

Hydraulically and Electrically-Operated Valves and Sluice Gates
Valves Designed for all Kinds of Service.

EDDY VALVE COMPANY, WATERFORD, N. Y.
New York Chicago Boston San Francisco Philadelphia

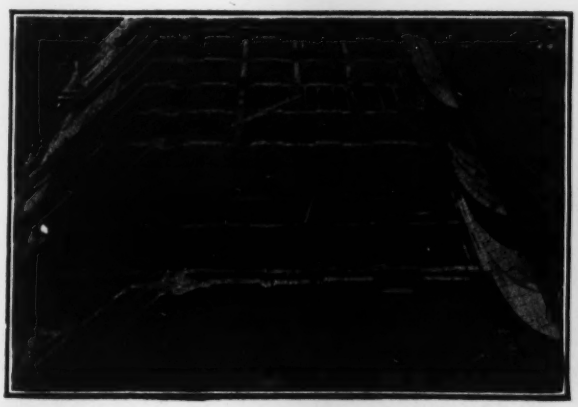
AMBURSEN Dams During Construction

This type of structure has been used for all heights up to 150 feet and for all classes of foundation. It can be built in less time and for less money than any other permanent type.



PORTLAND, RY. L. & P. CO. RIVER MILLS, OREGON

CONSUMERS POWER CO. RAPIDAN, MINN.



GEORGIA RY. L. & P. CO. MATHIS, GA.

JUNIATA HYDROELECTRIC CO. HUNTINGDON, PA.

AMBURSEN CONSTRUCTION CO., Inc., 61 Broadway, NEW YORK

(Owners Ambursen, Church, Coburn and Whitehead Patents)

GRAVITY PRESSURE

FILTERS

Water Softening Plants
Hypochlorite Apparatus

and all Sorts of Chemical Feeding Devices

Over 350 Municipal Filtration Plants Installed—Total Daily Capacity 900,000,000 Gallons

Write for Bulletin 15 1

THE NEW YORK CONTINENTAL JEWELL FILTRATION COMPANY
15 BROAD STREET, NEW YORK

Inter-State Building, Kansas City, Mo.; 111 W. Monroe St., Chicago, Ill.; New Birks Building, Montreal.

Originators of Mechanical Filtration

Mechanical Filtration Plants

Municipal and Industrial Purposes
Gravity and Pressure Types
Re-filtration Systems
for Natatoriums

The "Holyoke" Fire Hydrant

FOR TOWNS, CITIES AND FACTORIES

One of the Oldest
One of the Best

IN USE OVER 35 YEARS

It will pay you to send us your inquiries

Norwood Engineering Company
Florence, Mass., U. S. A.

This Was the Silver Lining in Denver's Cloud

Denver's citizens were swept with Typhoid. She tried filtration but still lost 48 in every 100,000 yearly.

A great cloud hung over Colorado's Metroplis. Finally she adopted

Liquid EBG Chlorine

The chart below tells the story.

E.B.G. Liquid Chlorine—and the typhoid rate dropped from 48 to 6.6! **Write for "The Wise Cities."**

ELECTRO BLEACHING GAS COMPANY
Manufacturers of Liquid Chlorine
20 East 41st Street, New York

Branch Office, Lumber Exchange Bldg., 12 La Salle St., Chicago. Pacific Coast Representative: California Jewell Filter Co., Merchants Exch. Bldg., San Francisco. Canadian Representative: General Supply Co., Ltd., Ottawa, Toronto, Montreal, Winnipeg.

From 48 to 6.6—

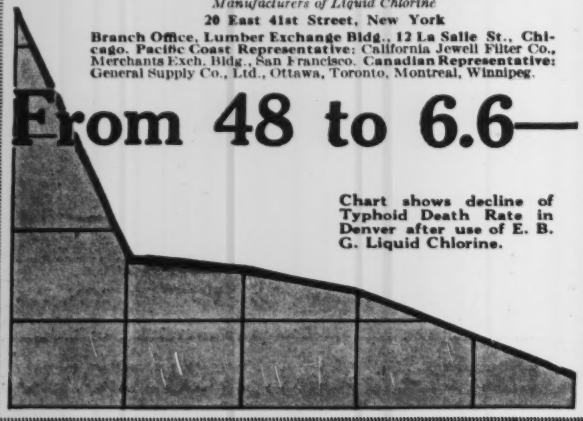


Chart shows decline of Typhoid Death Rate in Denver after use of E. B. G. Liquid Chlorine.

WATER SOFTENING AND FILTRATION PLANTS

AMERICAN WATER SOFTENER COMPANY
1000 CHESTNUT ST. PHILADELPHIA, PA.
No affiliation or working agreement with any of our competitors

Clean Water Mains
Deliver Full Capacity

We are glad to confer with municipal officials or Water Companies.

National Methods are patented

National Water Main Cleaning Company,

84 Church Street New York

Roberts Filter Mfg. Co.

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WATER FILTERS for Municipal and Industrial Plants Gravity and Pressure Types.

CHEMICAL DEVICES

WATER SOFTENING AND FILTRATION PLANTS

INTERNATIONAL FILTER CO.
30 South Dearborn St., Chicago
New York Office Woolworth Building

Wire Wound and Continuous Stave Wood Pipe for IRRIGATION and Water Systems. Asbestos and tin-lined Cedar Casings for insulating underground steam pipes.

30-in. Wire Wound Pipe for U. S. Reclamation Service

AMERICAN WOOD PIPE CO.
TACOMA WASHINGTON, U. S. A

Wood Stave Pipes Have Low Construction Costs

Built at the job—save freight and handling charges.

Joints need no expensive caulking. Pipe easily tapped.

Our engineering department is at your service to help solve your hydraulic problem.

Pacific Coast Pipe Co., Seattle, Wash.
Manufacturers of Machine Wire-Wound and Continuous Stave Wood Pipe.

PIPING FACTS

of interest are contained in the Washington P. & F. Co.'s book. The knowledge of experts has gone into it—men who have a means of solving the piping difficulty that perchance now conforts you.

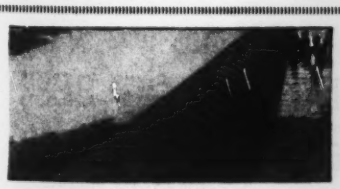
Today is a good day to send for your copy.

Washington Pipe & Foundry Co.
Tacoma, Washington
New York Office, Woolworth Bldg.

Portland is the Perfect Pipe

Made of the finest old growth Oregon or Douglas Fir, Portland Wood Pipe is cheaper than iron or steel pipe yet of greater efficiency.

Portland Wood Pipe Co., Portland Oregon



Wood Water Pipe

We build machine banded and with individual rods and lugs stave water pipe, from 2" up to 48" for various pressures. Write for our catalogue. It tells you all.

Standard Wood Pipe Co.
Williamsport, Penna.

NATIONAL

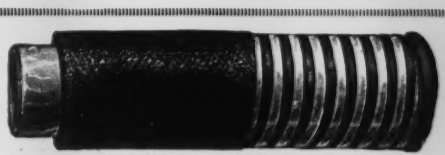
National Quality Counts in Cost and Service, Too

Many years of experience have given us the ability to understand and help our customers solve their pipe and tank problems.

Douglas Fir and California Redwood give us the materials that last and last—always 100% efficient. Get our prices.

Full information and Catalogs on request.

NATIONAL TANK & PIPE CO.
275-M Oak St.,
Portland, Ore.



WHY DON'T YOU USE
Wyckoff Wood Pipe
OTHERS DO

Over 1000 miles of Wyckoff Wood Pipe have been installed in the last three years. It can be furnished and laid at half the cost of cast iron.

IT LASTS AS LONG.

A. WYCKOFF & SON COMPANY
ELMIRA N. Y.
378 Piedmont Ave., Atlanta, Ga.
Johnson-Peters Co., Pittsburgh Terminal Warehouse, Pittsburgh, Pa.
551 West 14th Place, Chicago, Ill.

SHOES

Marion Shoes for Wood Pipe

are the result of 25 years' endeavor to produce a light-weight, efficient shoe.

This study and experience may be used to your advantage—

Acquaint us with your problem.

The Marion Malleable Iron Works
Marion, Indiana

THE FIRST CAST IRON PIPE EVER MADE IN THE WORLD'S HISTORY IS STILL IN SERVICE
SERVICE
CAST IRON PIPE
MEASURED BY
CAST IRON PIPE
CENTURIES
MORE THAN 250 YEARS OLD

The Cast Iron Pipe Publicity Bureau
1 Broadway, New York

TRADE **"LEADITE"** MARK
Registered U. S. Patent Office

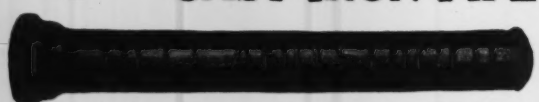
Requires No Caulking For Jointing Cast-Iron Water Mains

Leadite lessens labor. It fills every crevice from the yarn out to face of bell. Saves 50% to 65%. The efficient water main joint. Write for information. Specify Leadite.

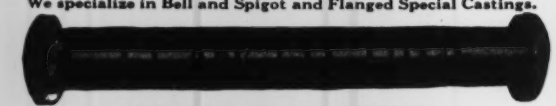
"Leadite Joints Increase in Strength With Age"

THE LEADITE COMPANY, Inc.
Land Title Building PHILADELPHIA, PA.

Manufacturers of **CAST IRON PIPE**



for WATER—GAS—CULVERTS—SEWERS
SPECIAL CASTINGS
Also Flexible Joint Pipe—Cylinders—Tubes, Milled and Plain Ends—High Pressure Fire Service Pipe.
We specialize in Bell and Spigot and Flanged Special Castings.

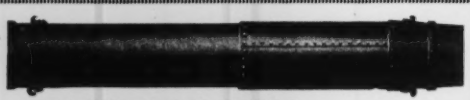


WARREN FOUNDRY & MACHINE CO.
Works: Phillipsburg, N. J. Sales Offices { Bowling Green Bldg., N. Y. 201 Devonshire St., Boston, Mass.
"Quality and Service Guaranteed"

Spiral Riveted Pipe. Large Diameter. Lap Welded Pipe. Forged Steel Pipe Flanges. Flexible Ball Joints. Send for Catalog
AMERICAN SPIRAL PIPE WORKS
50 Church St., New York Main Office and Works; CHICAGO, Box 485

Take Advantage of Lynchburg Service
Cast Iron Pipe and Specials
Half a century's experience, enormous production facilities and three strategic shipping points assure highest quality and on-time delivery.
LYNCHBURG FOUNDRY CO.
816 Peoples Gas Bldg. - - - - Chicago

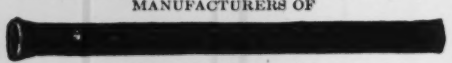
Dredge Pipe



PONTOON AND SHORE
Elbows, Branches, Ball Joints, Valves, Steel Pontoons
MACHOLD & RIDDELL, Stephen Girard Building PHILADELPHIA, PA.

Send to the U. S. Cast Iron Pipe & Foundry Co., 706 E. Pearl St., Burlington, N. J., for the remarkable story of
U S Cast Iron Pipe

AMERICAN CAST IRON PIPE COMPANY
MANUFACTURERS OF



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SALES OFFICES:
Birmingham, Ala.—Box 908. Chicago, Ill.—512 1st Nat. Bk. Bldg.
Columbus, Ohio—607 New Hayden Bldg. Dallas, Tex.—1217 Praetorian Bldg.
Minneapolis, Minn.—712 Plymouth Bldg. Kansas City, Mo.—716 Scarritt Bldg.
New York City—No. 1 Broadway. San Francisco, Cal.—711 Balboa Bldg.

2" TO 16" FOR WATER, GAS AND GENERAL PURPOSES
NO PACKING – NO POURING – NO CALKING
UNIVERSAL CAST IRON PIPE

See Trade Catalogues or Our Catalogue U8

With the **FAVORITE reversible ratchet WRENCH**

How much time do you waste in turning nuts in unhandy places with old style wrenches?

the nut turns with only a slight movement of the handle.

Nuts go on or come off like lightning.

GREENE, TWEED & CO.
109 Duane Street, New York

ROOT
Spiral Riveted Pipe—
Pipe Specialists for 48 years.
Abendroth & Root Mfg. Co.
Works: Newburgh, N. Y.
N. Y. Office: 45 Broadway

As **18-K** is to the Jeweler
The mark **DARLING** is to the Valve User The **BEST**
THE DARLING PUMP & MFG. COMPANY, Lim.
Box E Williamsport, Pa. A-12

"Water— or No Pay"

We Write It in the Contract

Our Consulting Hydraulic Engineers will, on request and without expense to you, make a personal inspection and report the practicability of your project. Write today for full information and free literature.

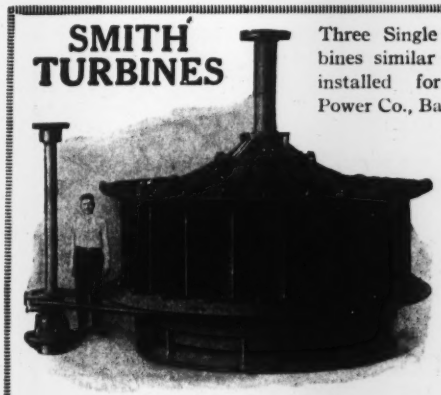
Address

Layne & Bowler Company
758 Randolph Bldg., Memphis, Tennessee

We Are Ground Water Well Specialists

We Specialize in Municipal and Corporate Water Plants

SMITH TURBINES



Three Single Vertical Turbines similar to illustration, installed for Blue Ridge Power Co., Balcony Falls, Va.

900 H P. each
90 R.P.M.
15 Feet Head

If interested address inquiry to Dept. "E."

S. MORGAN SMITH CO.
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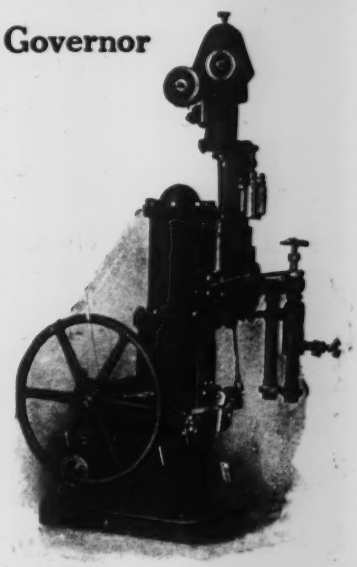

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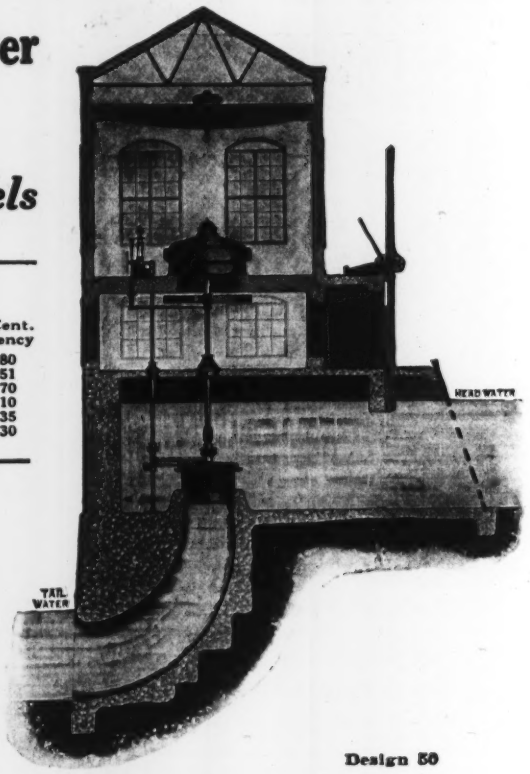

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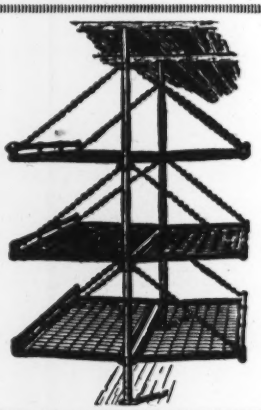

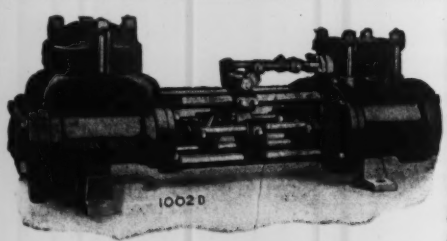

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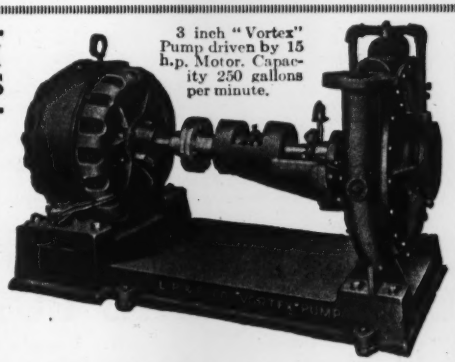

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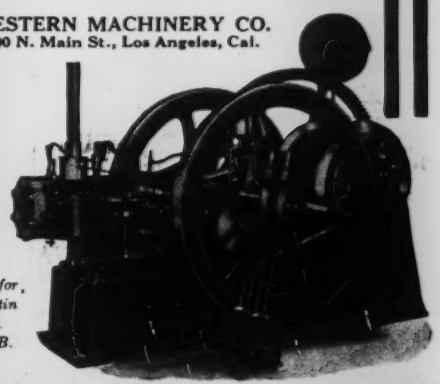

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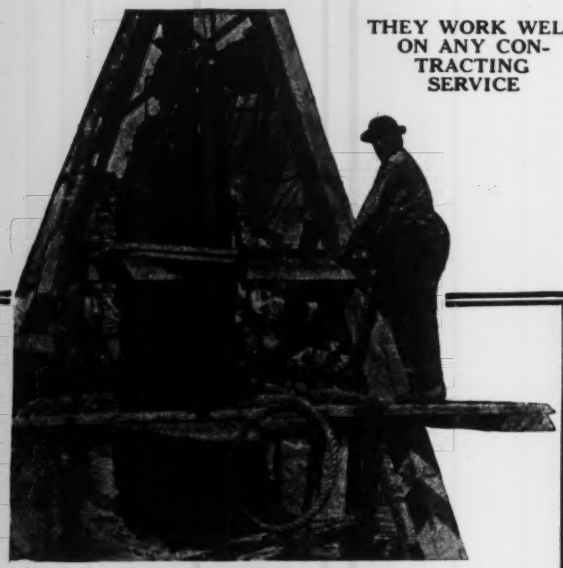

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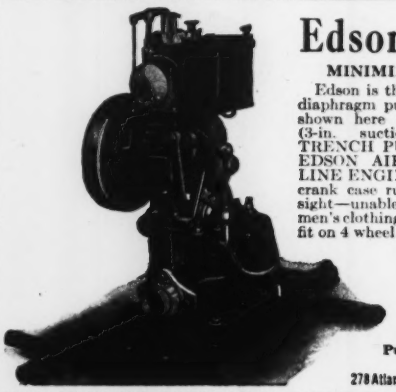

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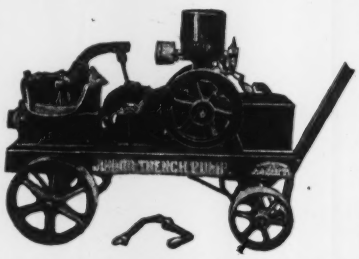

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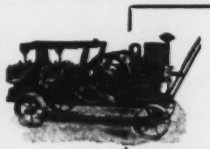

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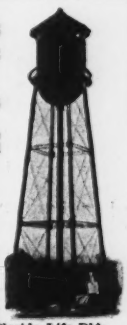

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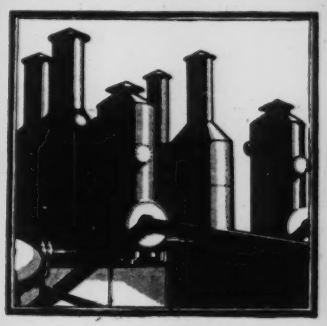
1857  1917

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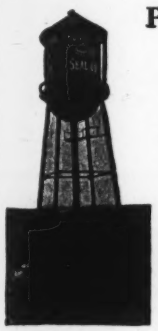

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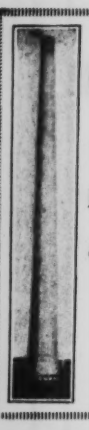

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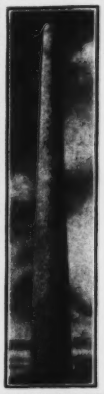

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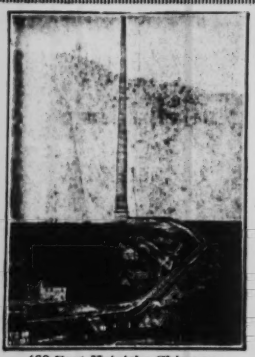

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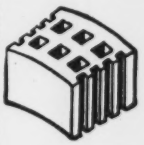

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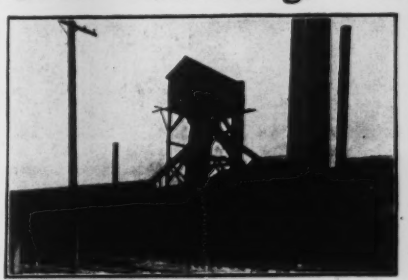

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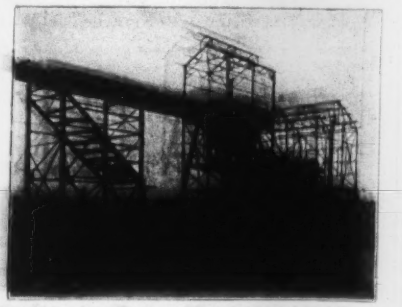

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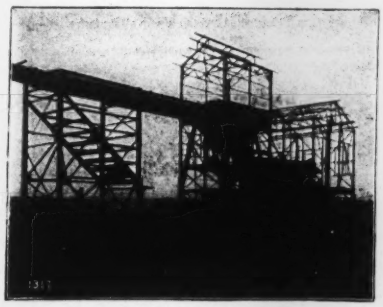

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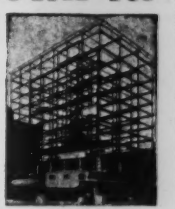

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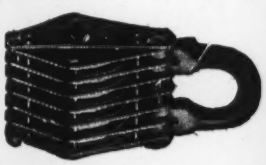

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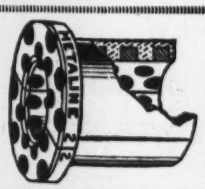

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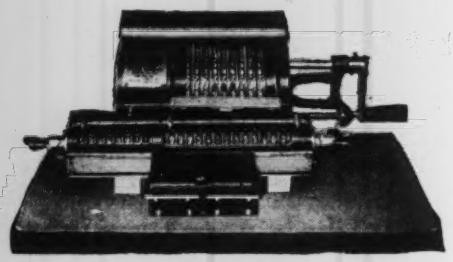

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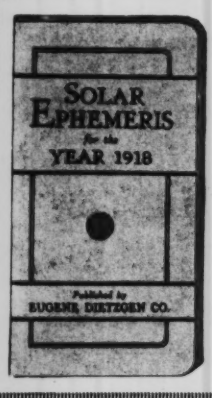

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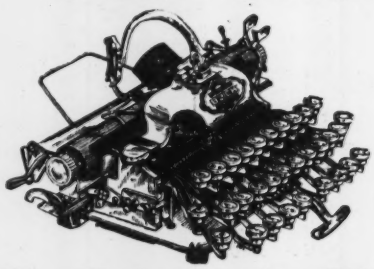

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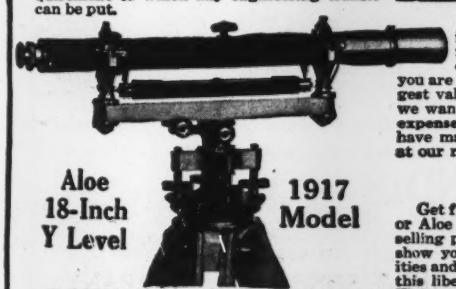

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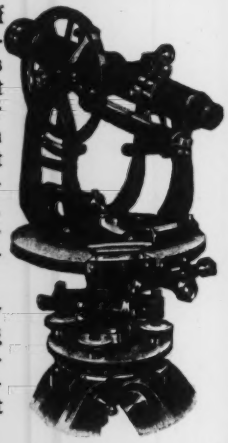

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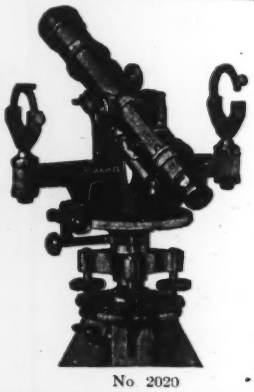

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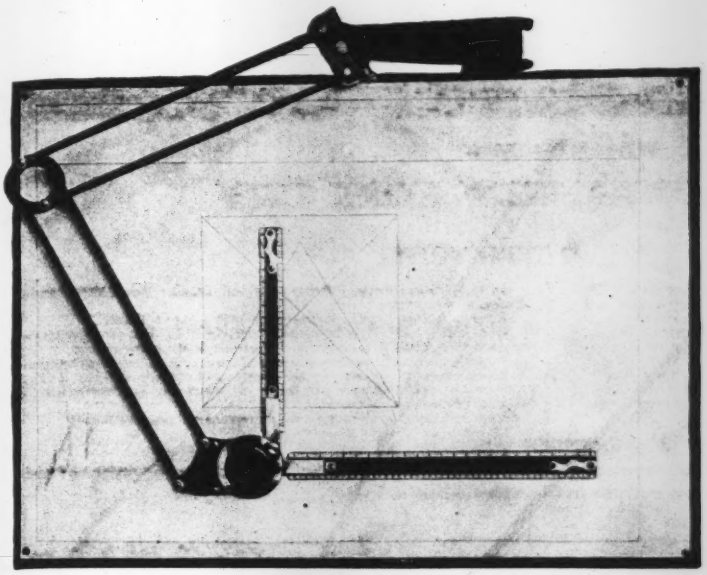

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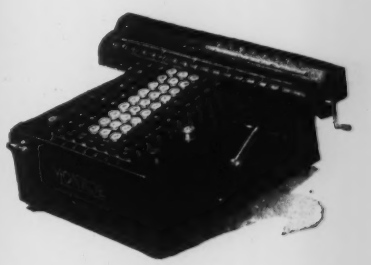

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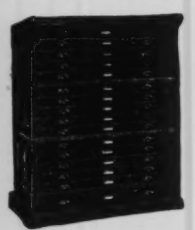

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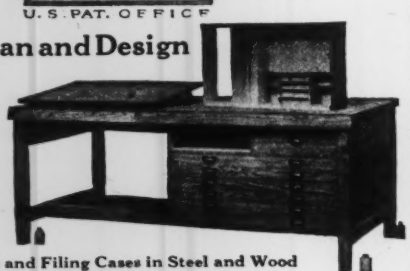

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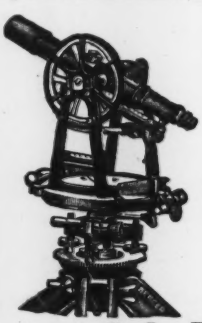

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Worthington Pump & Machinery Corp.

Conduit
Michigan Pipe Co.

Contractors' Equipment
Blaw-Knox Co.
Dravo-Doyle Co.
Hydraulic Pressed Steel Co.
Lakewood Engineering Co.
Western Wheeled Scraper Co.

Contractors' Lights
Milburn Co., Alexander

Controllers, Electric
General Electric Co.

Conveying Machinery
Gifford-Wood Co.
Jeffrey Mfg. Co.
Webster Mfg. Co., The

Conveyors
Chain Belt Co.
Hunt Co., Inc., C. W.
Jeffrey Mfg. Co.
Ohio Locomotive Crane Co.
Robins Conveying Belt Co.

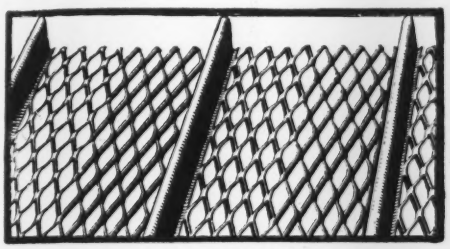
Conveyors, Ash
Webster Mfg. Co., The
Webster Mfg. Co., The

Corner Bead Metal
Consolidated Expanded Metal Cos.
Trussed Concrete Steel Co

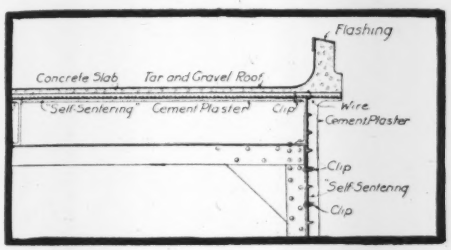
Cranes, Locomotive
Ball Engine Co.
Brown Hoisting Mchry. Co
Browning Co.
Byers Mach. Co., J. F.
Dravo-Doyle Co.
Clyde Iron Works
Erie Steam Shovel Co.
Industrial Works
McMyler Interstate Co.
Ohio Locomotive Crane Co
Orton & Steinbrenner Co.

How to save money on concrete construction— specify SELF-SENTERING

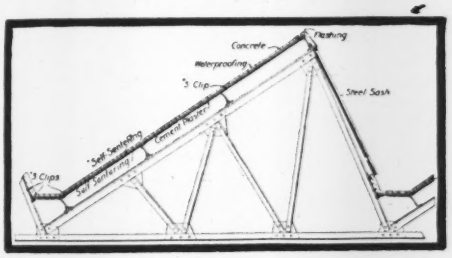
Self-Sentering saves money because it saves material—saves weight—saves time and labor—saves maintenance costs.



SELF-SENTERING



DETAIL OF EAVES OF FLAT SELF-SENTERING ROOF



DETAIL OF SELF-SENTERING SAW-TOOTH ROOF

SELF-SENTERING ROOF

Study the diagrams on this page. The first one shows a section of Self-Sentering. Note the strength and rigidity of the material—the parallel series of heavy, cold-drawn ribs, connected by diamond mesh, the most efficient form of expanded metal. Self-Sentering is a combined centering and reinforcing for concrete roof and floor construction. It acts first as form for the wet concrete, and as permanent reinforcing after the concrete is poured. It eliminates the need of temporary wooden forms.

Self-Sentering

Form and Reinforcement for Concrete Construction

Study with special care the two diagrams that show details of Self-Sentering roof construction. Self-Sentering roofs are adapted equally to steel-frame, wood-frame, or concrete-frame buildings. These sheets are merely laid over the roof supports, attached to them securely by clips, wire nails, or staples, and the concrete applied to the required thickness. Only enough passes through the mesh to imbed the steel thoroughly. The under side is then plastered with cement mortar and the roof completed.

The details of Self-Sentering floor construction are illustrated at the bottom of the page.

As in the case of Self-Sentering roofs, floors made of this material are comparatively light in weight, amply strong, fire-resistive, economical to build and maintain, permanent.

Present conditions imperatively demand that the architect or engineer should co-operate closely with his clients in the way of money-saving, enduring construction. That is why Self-Sentering is so logical and so desirable. *Write for complete data.*

THE GENERAL FIREPROOFING COMPANY, Youngstown, Ohio

Manufacturers of all types of Metal Lath, Concrete Reinforcements, and Waterproofings

Member Associated Metal Lath Manufacturers

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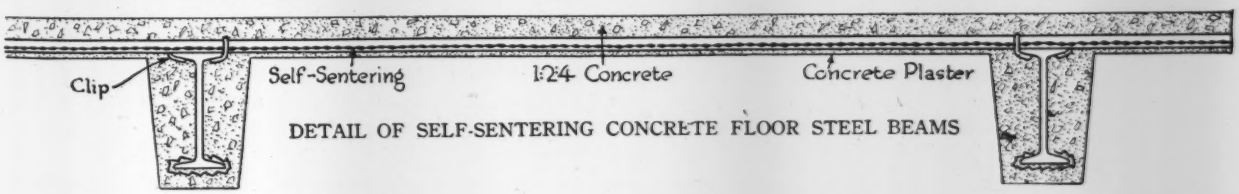


DETAIL OF SELF-SENTERING CONCRETE FLOOR STEEL BEAMS

WHAT AND WHERE TO BUY

Cranes and Hoists
Brown Hoisting Mchry. Co.
Whiting Fdry. Equip. Co.
Morse & Sons, A. J.

Cranes, Traveling
Brown Hoisting Mchry. Co
Chesapeake Iron Works
Pawling & Harnischfeger Co.
Terry & Tench Co., Inc.
Whiting Foundry Equipment Co.

Cranes, Wrecking
Browning Co.
Industrial Works
Ohio Locomotive Crane Co.

Creosoted Blocks, Lumber,
Jennison-Wright Co.
Ohio Wood Preserving Co.

Creosoting
American Creosote Works
Barrett Co., The
Jennison-Wright Co.

Crushers and Pulverizers
Allis-Chalmers Mfg. Co.
Austin-Western Rd. Mchy. Co.
Bacon, Earle C.
Buchanan Co., Inc., C. G.
Jeffrey Mfg. Co.
Orton & Steinbrenner Co.
Raymond Bros. Impact Pulverizer Co.
Smidth & Co., F. L.
Smith Co., T. L.
Traylor Engr. & Mfg. Co.
Universal Road Mchry. Co
Worthington Pump & Machinery Corp.
Wright Wire Co.

Culverts
American Sheet and Tin Plate Co.
Armco Iron Culvert and Flume Mfrs. Assn.
Bark River Bridge & Culvert Co.
California Corrugated Culvert Co.
Canton Culvert & Silo Co
Coast Culvert & Flume Co
Corrugated Culvert Co.
Delaware Metal Culvert Co
Dixie Culvert & Metal Co
Hardesty Mfg. Co.
Illinois Corrugated Metal Co.
Independence Culvert Co.
Iowa Pure Iron Culvert Co
Kentucky Culvert Mfg. Co.
Lone Star Culvert Co.
Lyle Corrugated Culvert Co.
Michigan Bridge & Pipe Co.
Montana Culvert Co.
Nevada Metal Mfg. Co.
New England Metal Culvert Co.
North East Metal Culvert Co.
Ohio Corrugated Culvert Co.
O'Neall Co., W. Q.
Penn. Metal Culvert Co.
Road Supply & Metal Co.
Sioux Falls Metal Culvert
Spokane Corr. Culvert & Tank Co.
Tennessee Metl. Culvert Co.
Utah Corr. Culvert & Flume Co.
Virginia Metal Culvert Co.
Western Metal Mfg. Co.
Wyatt Metal Works

Curb Boxes, Meter
Cast Iron Pipe Publicity Bureau

Curb, Steel Protected
Electric Welding Co.
Trussed Concrete Steel Co.

Cutters, Steel Collapsible
Foote Concrete Mchry. Co.

Cutting Blowpipes for Steel
Davis-Bournonville Co.
Oxweld Acetylene Co.
Wardwell, F. S.

Dams
Ambrusen Co.
Foundation Co.

Derricks and Derrick Fittings
Byers Mach. Co., J. F.
McMyler Interstate Co
Clyde Iron Works
Dravo-Doyle Co.
Hayward Co.
Lidgerwood Mfg. Co.
National Hoisting Eng. Co.
Terry & Tench Co.
Thomas Elevator Co.

Disinfecting Apparatus
Electro Bleaching Gas Co.
Wallace & Tiernan Co., Inc.

Ditching Machinery
Smith Co., T. L.

Docks and Harbor Work
Canal Construction Co., Inc.

Door and Shutters, Steel Rolling
Edwards Mfg. Co., The

Doors, Steel
Luptons Sons Co., David

Drafting Machines
Universal Drafting Mach. Co.

Drag Line, Cableway Excav.
Ball Engine Co.
Erie Steam Shovel Co.
Lidgerwood Mfg. Co.
Sauerman Bros.

Drawing Material
Aloe Co., A. S.
Alteneder & Sons, Theo.
Defiance Mfg. Co.
Dietzgen Co., Eugene
Keuffel & Esser Co.
Kolesch & Co.
Weber & Co., F.

Drawing Tables
Economy Drawing Table Co.
Kolesch & Co.

Dredges
Bay City Dredge Works
Flory Mfg. Co., S.
Hayward Co.
Lidgerwood Mfg. Co.
Marion Steam Shovel Co.
Morris Machine Works
Osgood Co.
Smith & Sons Co., Theo.

Dredging Machinery
Bay City Dredge Works
Blaw Knox Co.
Worthington Pump & Machinery Corp.

Drills, Core
Ingersoll-Rand Co.
Keystone Driller Co.
McKiernan-Terry Drill Co.
Sullivan Machinery Co.

Drills, Electric
Denver Rock Drill Co.

Drills, Hammer
Denver Rock Drill Co.
Ingersoll-Rand Co.
McKiernan-Terry Drill Co.

Drills, Pneumatic
Chicago Pneumtaic Tool Co.
Sullivan Machinery Co.

Drills, Rock
Chicago Pneumtaic Tool Co.
Denver Rock Drill Co.
General Electric Co.
Ingersoll-Rand Co.
Jeffrey Mfg. Co.
McKiernan-Terry Drill Co.
Schramm & Son, Chris. D.
Sullivan Machinery Co.

Drums, Hoisting
Blaw-Knox Co.
Hayward Co.
Monighan Machine Co.

Dryers, Cement, Asphalt and Sand
Fuller Engineering Co.

Electrical Wires and Cables
American Steel & Wire Co.
General Electric Co.

Elevators
Byers Mach. Co., John F.
Chain Belt Co.
Hunt Co., C. W.
Insley Mfg. Co.
Ohio Locomotive Crane Co.
Ransome Concrete Mchry.
Ridgway & Son Co., Craige
Smith Co., T. L.
Traylor Eng'g & Mfg. Co.

Elevators, Bucket
Gifford-Wood Co.
Hunt Co., C. W.
Jeffrey Mfg. Co.
Ohio Locomotive Crane Co.

Engineers and Contractors
Austin Co., The
Fuller Engrg. Co.
Hedden-Pearson-Starrett Co.
Raymond Con. Pile Co.
Smith, Hauser & MacIsaac, Inc.
Terry & Tench Co.
Whitman A. Co.

Engineers' and Draftsmen's Instruments and Supplies
Ainsworth & Son, Wm.
Aloe Co., A. S.
Alteneder & Sons, Theo.
Beckmann Co., L.
Berger & Sons, C. L.
Blickensderfer Mfg. Co.
Brandis & Sons Mfg. Co.
Buff & Buff Mfg. Co.
Chicago Steel Tape Co.
Defiance Mfg. Co.
Dietzgen Co., Eugene
General Electric Co.
Gurley, W. & L. E.
Higgins & Co., Chas. M.
Keuffel & Esser Co.
Kolesch & Co.
Marchant Calculating Machine Co.
Monroe Calculating Machine Co.
Weber & Co., F.
Weiss Instrument Co.
White Co., David
Young & Sons, Inc.

Engines, Crude Oil
Worthington Pump & Machinery Corp.

Engines, Gas, Gasoline, Oil
Allis-Chalmers Mfg. Co.
Chicago Pneumatic Tool Co
Scramm & Son, Chris. D.
Western Machinery Co.
Worthington Pump & Machinery Corp.

Engines, High-Duty Pumping
Allis-Chalmers Mfg. Co.
Morris Machine Works

Engines, Hoisting
Allis-Chalmers Mfg. Co.
Byers Mach. Co., John F.
Clyde Iron Works
Flory Mfg. Co., S.
Lidgerwood Mfg. Co.
Monighan Machine Co.
National Hoisting Eng. Co.

Engines, Portable
Leffel & Co., James

Engines, Power Plant
Ball Engine Co.
Erie Steam Shovel Co.

Engines, Pump
Western Machinery Co.

Engines, Traction
Leffel & Co., James

Engines, Water-Works
Worthington Pump & Mchry. Corp.

Excavating Machinery
Austin Drainage Excavator Co., F. C.
Ball Engine Co.
Bay City Dredge Works
Blaw-Knox Co.
Browning Co., The
Buckeye Traction Ditcher Co.
Clyde Iron Works
Economy Excavator Co.
Erie Steam Shovel Co.
Marion Steam Shovel Co.
Monighan Machine Co.
Municipal Engineering & Contracting Co.
Osgood Co., The
Parsons Co., The
Pawling & Harnischfeger Co.
Rochester Excavating Machinery Co.
Smith Co., T. L.
Thew Auto Shovel Co.
Union Iron Works

Excavators, Dragline
Austin Drainage Excavator Co., F. C.
Dravo-Doyle Co.
Economy Excavator Co.
Hayward Co
Lidgerwood Mfg. Co.
Pawling & Harnischfeger Co.

Expanded Metal
Consolidated Expanded Metal Cos.
Trussed Concrete Steel Co

Facing, Foundry
General Electric Co.

Fans, Electric
Westinghouse Electric & Mfg. Co.

Filing Cabinets
Economy Drawing Table Co.

Filters, Apparatus for Water
American Water Softener Co.
Electro Bleaching Gas Co.
International Filter Co.
N. Y. Con. Jewell Filt. Co.
Norwood Eng'g. Co.
Pittsburgh Filter Mfg. Co
Roberts Filter Mfg. Co.
Simplex Valve & Meter Co
Wallace & Tiernan Co., Inc.

Fire Engines, Auto
White Co., The

Fire Escapes, Steel
Berlin Construction Co.

Fire Extinguishers
Badger & Sons Co., E. B.

Fire Hydrants
Flower-Stephens Mfg Co.

Fireproof Material and Construction
Asbestos Protected Metal Co.
General Fireproofing Co., The
Keasbey & Mattison Co.

Flooring
Asbestos Protected Metal Co.
Jennison-Wright Co.

Floor, Wood Block
Barrett Co., The

Flumes, Iron and Steel
Petroleum Iron Works Co.

Flumes, Metal
Armco Iron Culvert & Flume Mfrs. Assn.

Forgings, Steel
Bethlehem Steel Co.
Carnegie Steel Co.

Form Clamps
Blaw-Knox Co.
Concrete Service Co.
Insley Mfg. Co.
Marion Malleable Iron Works
Universal Form Clamp Co.

Forms for Sewers, Conduits, Etc.
Blaw-Knox Co.
Foote Concrete Mchry. Co.

Forms for Walls, Building Construction, Etc.
Blaw-Knox Co.

Forms, Steel, for Concrete Construction
Blaw-Knox Co.
Concrete Engineering Co.

Foundations
American Bridge Co.
Cranford Constr. Co.
Lackawanna Steel Co.
Raymond Concrete Pile Co.
Smith, Hauser & MacIsaac, Inc.
Underpinning & Foundation Co.

Foundry Equipment
Whiting Fdry. Equip. Co.

Frogs and Switches, Railway
Lakewood Engineering Co.
Ramapo Iron Works

Furnaces, Annealing and Tempering
American Gas Furnace Co.
General Electric Co.

Furnaces, Garbage and Refuse
Bartlett & Snow Co., C. O.
Jeffrey Mfg. Co.
Power Specialty Co.

Furnaces, Gas
American Gas Furnace Co.

Garbage-Disposal Apparatus
Jeffrey Mfg. Co.

Gaskets
Badger & Sons Co., E. B.

Gas Producers
Improved Equipment Co.

Gates and Valves
Coffin Valve Co.

Gates, Sluice
Chapman Valve Co.
Crane Co., The
Fargo Engineering Co.
Flower-Stephens Mfg. Co.

Gauges, Loss of Head
Simplex Valve & Meter Co.

Gauges, Rate of Flow
Simplex Valve & Meter Co.

Gears
General Electric Co.

Generators
Allis-Chalmers Mfg. Co.
General Electric Co.

Glass Construction
Keppler Glass Constructions, Inc.

Glass, Fireproof
Mississipi Wire Glass Co.

Governors, Water-Wheel
Woodward Governor Co.

Graders, Elevating
Western Wheeled Scraper Co.

Graders, Road
Austin Mfg. Co.
Austin-Western Road Machinery Co.
Ball Engine Co.
Erie Steam Shovel Co.

Graders, Street
Ball Engine Co.
Erie Steam Shovel Co.

Grading Machinery
Ball Engine Co.
Erie Steam Shovel Co.

Granite
Rockport Granite Co.

Graphite
Dixon Crucible Co., Joseph

Grating, Subway
Irving Iron Works

Gravel Excavators
Sauerman Bros.

Gravel Washing Plants
Sauerman Bros.

Hammers, Steam
McKiernan-Terry Drill Co
National Hoisting Eng. Co

Heating Machines fo. Annealing and Temperling
American Gas Furnace Co
General Electric Co.

Hoists, Concrete
Clyde Iron Works
Lakewood Engineering Co

Hoists, Electric, Gasoline and Steam
Clyde Iron Works
Flory Mfg. Co., S.
Ingersoll-Rand Co.
Lakewood Engineering Co
Lausing Co
Lidgerwood Mfg. Co.
Monighan Mach. Co.
National Hoisting Eng. Co.
Schramm & Son, Chris. D.
Smith Co., T. L.
Vulcan Iron Works

Hoists, Headgate
Coffin Valve Co.

Hoists, Pneumatic
Whiting Fdry. Equip. Co.

Hooks, Hoist and Wire Ropes
Wright Wire Co.

Hopper, Concrete Gravity
Insley Mfg. Co.

Hose, Metallic
American Metal Hose Co.

Hose, Steam
American Metal Hose Co.

Hose, Suction
American Metal Hose Co.

Hydrants
Eddy Valve Co.
Kennedy Valve Mfg. Co.
Norwood Engineering Co.
Rensselaer Valve Co.
Smith Mfg. Co., A. P.
Wood & Co., R. D

Hydro-Electric Construction
General Electric Co.

Inks and Adhesives
Higgins Co., C. M.

Inserts, Concrete
Security Insert Co.
Trussed Con. Steel Co.

Inspecting
(See Directory of Engineers)

Instruments, Drawing
Defiance Mfg. Co.
Dietzgen Co., Eugene
Keuffel & Esser Co.

Instruments, Surveying
Defiance Mfg. Co.
Dietzgen Co., Eugene
Keuffel & Esser Co.
White Co., David
Young & Sons, Inc.

Iron Work, Structural and Ornamental
Christopher & Simpson Iron Works

Jacks
McKiernan-Terry Drill Co.
Norton, Inc., A. C.

Joints, Expansion, Copper
Badger & Sons, E. B.

Joints, Expansion, Paving
Barrett Co., The
Carey Co., Philip
Trussed Concrete Steel Co.

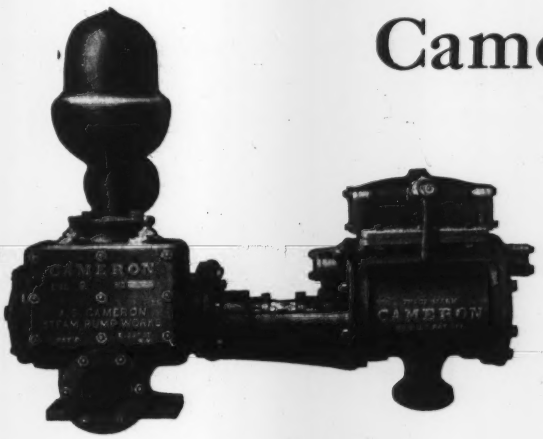
Joint Filler, Paving
Barrett Co., The
Standard Oil Co. of N. Y.

Joints, Flexible Pipe
Coldwell-Wilcox Co.
Crane Co., The
U. S. Cast Iron Pipe & Foundry Co.

The Slogan of the Cameron—"Character: The Grandest Thing"

When You Buy Your Next Pump Consider Upkeep Cost

Don't be misled by low initial cost. That means a cheap pump. It means high upkeep cost, shorter life and less service. Consider upkeep cost when you buy your next Pump. Consider the Cameron and its record—over half a century of Pump building—over 70,000 Cameron Pumps in service today.



Cameron Pumps

are not expensive in first cost, but they do cost more than some pumps. But in the end they cost less than any other pump at any price. The Cameron record proves this.

Cameron Pumps are strong and serviceable. Have few working parts—none exposed. No outside valve gear. The ideal pump for long life and low upkeep.

Ask for Bulletin No. 7104.

A. S. Cameron Steam Pump Works
11 Broadway, New York
Offices The World Over

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THE WAR is no respecter of persons—even Uncle Sam is not exempt from its inconveniences.

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Kilns, Lime
Improved Equipment Co.
Petroleum Iron Works Co.

Lamps, Arc and Incandescent
General Electric Co.

Lamps, Electric
General Electric Co.

Lamps, Flood
General Electric Co.
Western Electric Co.

Lath, Metal
Armco Iron Culvert and Flume Mfrs. Assn.
Asbestos Protected Metal Co.
Consolidated Expanded Metal Cos.
General Fireproofing Co., The
Mitchell-Tappen Co.

Lead Pencils
Dixon Crucible Co., Jos.

Leadite
Leadite Co., Inc., The

Lights, Contractors'
Carbic Mfg. Co.
General Electric Co.
Milburn Co., Alex.

Lights, Portable
Carbic Mfg. Co.
Milburn Co., Alex.

Lights, Roof
Keppler Glass Constructions, Inc.

Lights, Vault
Keppler Glass Constructions, Inc.

Lime
Hydrated Lime Bureau
National Lime Mfrs. Assn.

Lime, Hydrated
Hydrated Lime Bureau
National Lime Mfrs. Assn

Loaders, Wagon
Bonney Supply Co.
Gifford-Wood Co.
Haiss Mfg. Co., Inc., Geo.
Jeffrey Mfg. Co.

Lockers, Steel
Edwards Mfg. Co., The
Lupton's Sons Co., David

Locomotives, Compressed Air
Porter & Co., H. K.
Vulcan Iron Works

Locomotives, Electric
American Locomotive Co.
General Electric Co.
Jeffrey Mfg. Co., The

Locomotives, Fireless Steam
Porter Co., H. K.

Locomotives, Gasoline
Bell Locomotive Wks., Inc.
Vulcan Iron Works

Locomotives, Steam
American Locomotive Co.
Bell Locomotive Works
Porter Co., H. K.
Vulcan Iron Works

Logging Outfits
Parsons Co., The

Lubricants
Dixon Crucible Co., Joseph
Greene, Tweed & Co.
Texas Company, The

Lumber
Bowers Co., S. P.
Great Southern Lumber Co.
Pearson & Luduscher Lumber Co., Inc.
Southern Pine Sales Corp.

Machinery and Equipment, Second-Hand
(See advts. in Searchlight Section)

Manometers
Simplex Valve & Meter Co

Manhole Covers
Bissell Co., F.
Central Foundry Co.
Sessions Foundry Co.

Metal Forms for Concrete
American Bridge Co.
Hydraulic Pressed Steel Co.

Metals, Perforated
Chicago Perforating Co.

Metal, Reinforcing, for Concrete Work
Consolidated Expanded Metal Cos.
Franklin Steel Works
Mitchell-Tappen Co.
Wright Wire Co.

Meter Box Covers
Buffalo Meter Co.
Cast Iron Pipe Publicity Bureau
Pittsburgh Meter Co.

Meter Boxes
Pittsburgh Meter Co.

Meters, Current
General Electric Co.
Gurley, W. & L. E.

Meters, Irrigation
Hydrometric Co.

Meters, Water, Oil and Gas
Buffalo Meter Co.
General Electric Co.
Neptune Meter Co.
Pittsburgh Meter Co.
Simplex Valve & Meter Co.
Worthington Pump & Machinery Corp.

Meter Provers
Pittsburgh Meter Co.

Meters, Steam
General Electric Co.

Mining Machinery
Sullivan Machinery Co.
Worthington Pump & Machinery Corp.

Mixers, Cement and Concrete
American Cement Machine Co.
Blaw-Knox Co.
Cement-Gun Co.
Foote Concrete Mchry. Co.
Lakewood Engineering Co.
Lansing Co.
Municipal Engineering & Contracting Co.
Northwestern Steel & Iron Works
Ransome Concrete Machinery Co.
Schramm & Son, Chris. D.
Smith Co., T. L.
Traylor Engrg. & Mfg. Co.
Worthington Pump & Machinery Corp.

Mixers, Grout
Ransome Concrete Machinery Co.

Mixers, Mortar
American Cement Machine
Lakewood Engineering Co.
Lansing Co.
Municipal Engineering & Contracting Co.
Northwestern Steel & Iron Works
Ransome Concrete Machinery Co.
Smith Co., T. L.

Molds, Pipe and Culvert
Blaw-Knox Co.
Foote Concrete Machinery Co.

Motors, Electric
General Electric Co.

Oil, Lubricating
Texas Company, The

Packing, Water-Pipe
Greene, Tweed & Co.

Paints, Graphite
Toch Bros.
Trussed Con. Laboratories

Paints and Metal Coatings
Barrett Co., The
Carey Co., Philip
Dixon Crucible Co., Joseph
Maritino Coating Corp.
Minwax Co., Inc.
Toch Bros.
Trussed Con. Laboratories

Partitions
Asbestos Protected Metal Co.
Lupton Sons Co., David

Pavements
Amies Road Co.
Barrett Co., The

Paving Blocks, Granite
Leopold Co., J. E.
Rockport Granite Co.

Paving Blocks, Wood
Jennison-Wright Co.

Penstocks
Lackawanna Steel Co.

Pile Drivers
Browning Co., The
McMyler Interstate Co.

Pile Driving Machinery
Dravo-Doyle Co.
Industrial Works
McKiernan-Terry Drill Co.
National Hoisting Engine Co.
Union Iron Works

Pile Hammers
National Hoisting Eng. Co

Pile, Shoes
Janney-Steinmetz Co.

Piles, Concrete
Cranford Constr. Co.
Raymond Con. Pile Co.
Smith, Hauser & MacIsaac, Inc.
Underpinning & Foundation Co.

Piles, Wood
Bowers Co., S. P.

Piling
Jennison-Wright Co.

Piling, Interlocking Steel
Foundation Co., The
Lackawanna Steel Co.
Smith, Hauser & MacIsaac, Inc.
Underpinning & Foundation Co.

Piling, Steel Sheet
Carnegie Steel Co.
Lackawanna Steel Co.

Pipe Bends
East Jersey Pipe Corp.

Pipe, Cast-Iron
American Cast Iron Pipe Co.
Armco Iron Culvert & Flume Mfrs. Assn.
Cast Iron Pipe Publicity Bureau
Central Foundry Co.
Lynchburg Foundry Co.
U. S. Cast Iron Pipe & Foundry Co.
Warren Fdry. & Mach. Co.

Pipe Covering
Carey Co., Philip
Wyckoff & Son Co., A.

Pipe, Dredge
Machold & Riddell

Pipe Fittings
American Spiral Pipe Wks.
Central Foundry Co.
U. S. Cast Iron Pipe and Foundry Co.

Pipe Joint Compound (Pressure)
Leadite Co., Inc., The

Pipe, Lap Welded
American Spiral Pipe Wks.

Pipe Line Supplies
Marion Malleable Iron Works

Pipe, Lock Bar
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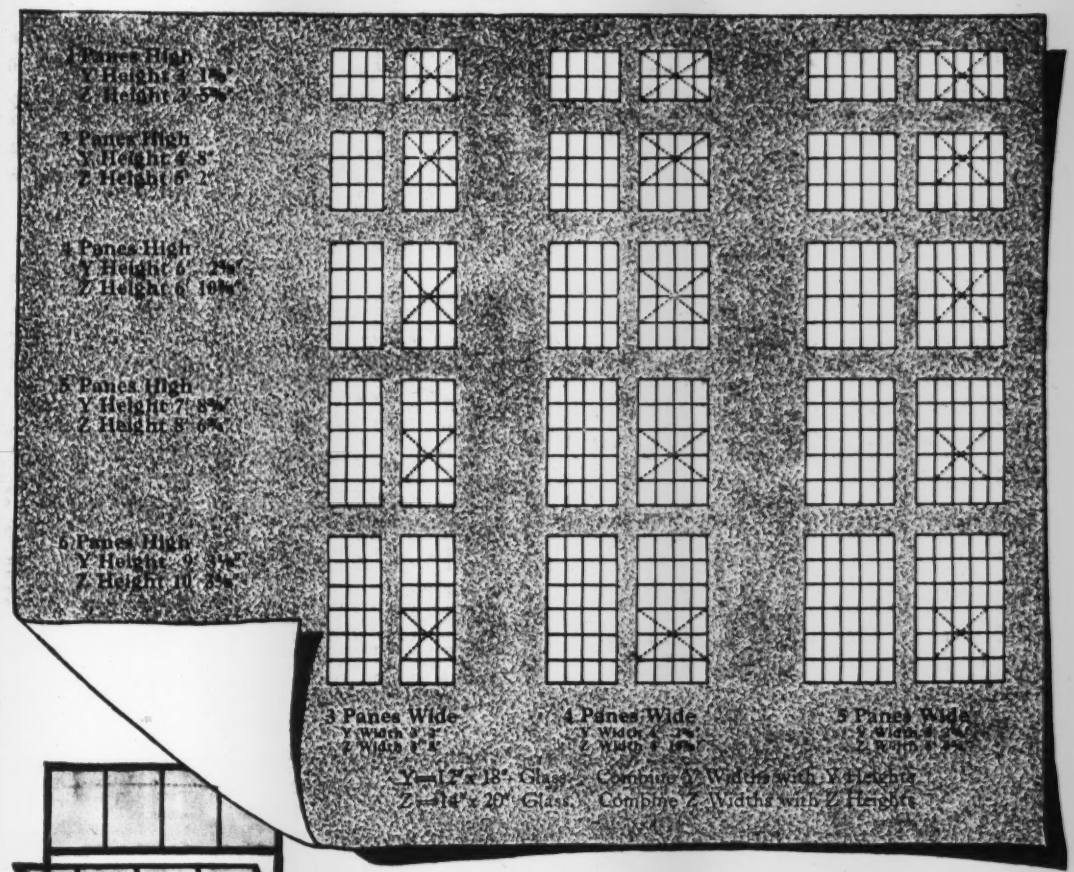
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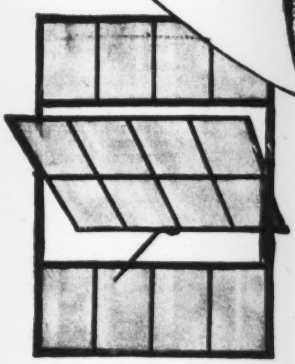

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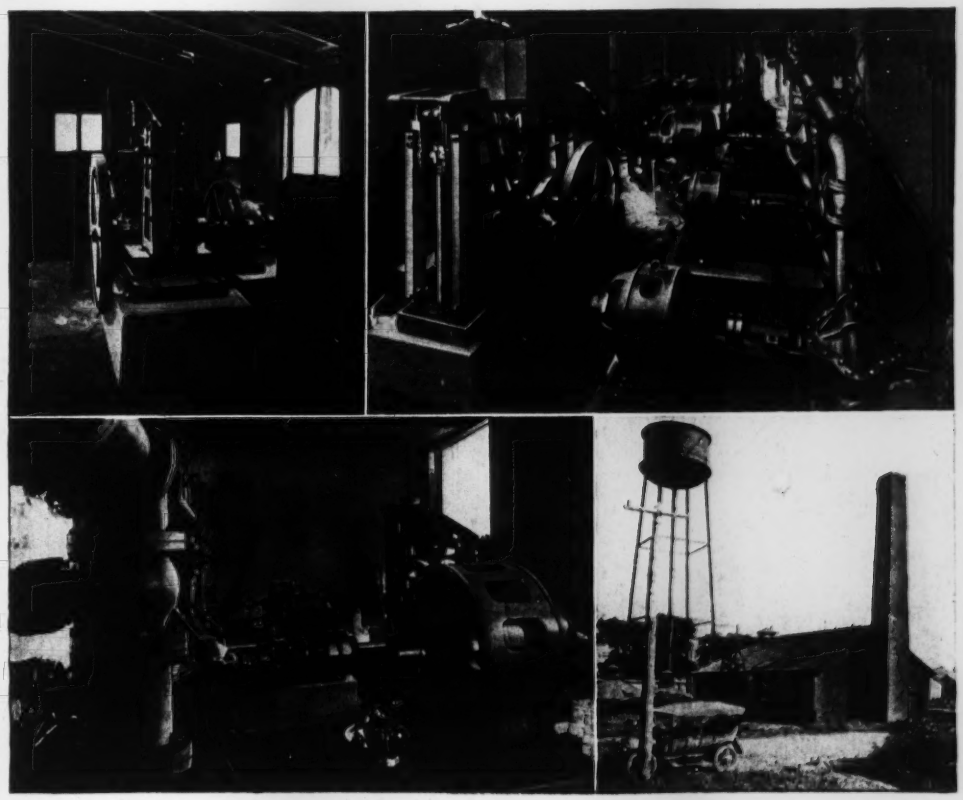

Reducing the Cost of Operation by Modernizing the Waterworks Plant

Substituting modern electrically-driven pumps for antiquated steam pumps in the waterworks plant enabled the town of Bushnell, Ill., to obtain more flexible equipment and greatly reduce the cost of operation.

Bushnell has a population of about 2700 and has a daily water consumption of approximately 125,000 gallons. The water supply is furnished by two 10-inch wells, each about 1800 feet deep, one of which is located in, and the other immediately adjoining the pumping plant.

In these wells were installed two No. 1½ Figure 475, 36-inch stroke "American" deep well power heads, each connected by rawhide pinions to 7½ h.p., 3-phase, 60-cycle, 440-volt, slip ring motors geared to operate at 22 r.p.m., and each operating a 36-inch stroke 5¾-inch double-acting water cylinder placed 200 feet in the well and having a capacity of 170 g.p.m.

The deep well pumps deliver water to a surface reservoir which forms the supply for three new horizontal double suction single stage "American" centrifugal pumps direct connected to electric motors. Two of these pumps are each 3-inch discharge pipe diameter, driven by a 15-h.p. 3-phase, 60-cycle, 2200-volt, slip ring motor and having a capacity of 300 g.p.m. against 50 lb. pressure, when operating at 1750 r.p.m. The duty of these pumps is to deliver water either into elevated tank or directly into the mains for domestic service.

The third pump is an "American" 8-inch high pressure horizontal, single stage, double suction type, direct connected to 100-h.p., 3-phase, 60-cycle, 2200-volt, slip ring motor and having a capacity of 1000 g.p.m. against 100-lb. pressure when operating at 1750 r.p.m. The duty of this pump is to furnish high pressure in case of fire.

The accompanying illustrations show exterior and interior views of this installation. Electric current is purchased from the Central Illinois Public Service Co. This installation demonstrates how old water supply plants may be modernized with "American" pumps making use of existing wells, reservoir and elevated tank and greatly reduce the cost of operation and up-keep.

American centrifugal pumps are described in catalog 149 and deep well pumps in catalog 130. Write for them.

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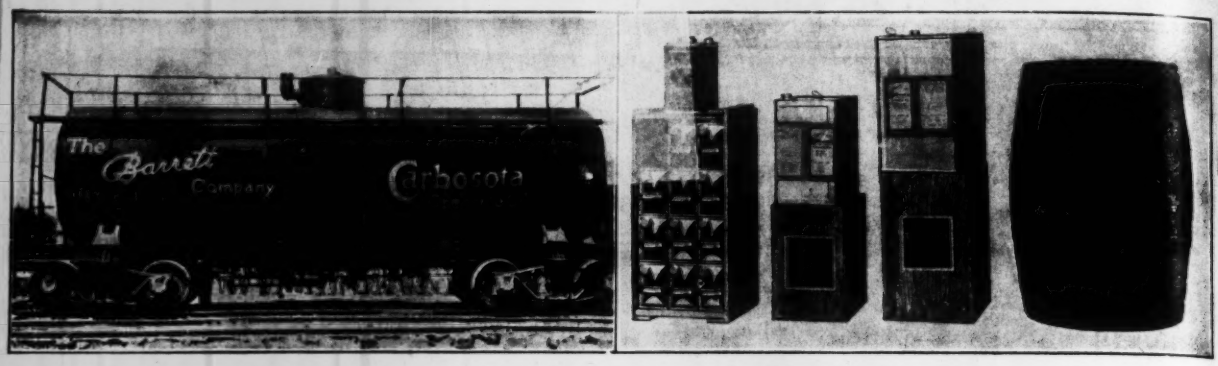

Tank-car (10,000 *gallons*), 1-*gallon can*, 5-*gallon can*, 10-*gallon can*, 1 *wooden barrel*.
(*Any quantity may be conveniently obtained*)

Pure Coal-Tar Creosote Oil

has proved to be the *most efficient* of all wood-preservatives.

Carbosota Creosote Oil is simply that, refined and made physically fit for use in the Open-Tank Process and by the Brush Method.

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Briefly, Carbosota Creosote Oil meets the three chief requirements of non-pressure treatments to the fullest extent, namely:

Efficiency—It has proved to be the most effective protection against decay for structural wood. Coal-tar creosote has been used for nearly four score years in this country. Its consumption in the wood-preserving industry has reached more than 100,000,000 gallons annually, due exclusively to merit.

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Convenience — Carbosota Creosote Oil is obtainable in packages of convenient size throughout the country and is always uniform. Its physical characteristics permit its use under practically all conditions, as it remains liquid at temperatures below which work would not generally be carried on.

Thus wood-preservation is placed within the reach of the smallest as well as the larger consumers.

As the largest producers of Creosote Oil in the United States, we are able to maintain a standard of service which cannot be equaled, and this is at the disposal of all who may be interested in wood-preservation. Detailed data and technical assistance may be obtained by addressing nearest office.

(Note: Green wood cannot be effectively creosoted by non-pressure processes. It should be air-dry. In regions of moist, warm climate, wood for some species may start to decay before it can be air-dried. Exception should be made in such cases, and treatment modified accordingly.)

Booklet regarding the CARBOSOTA *treatment free on request*

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